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Studies in
INDUSTRIAL POLICY and DEVELOPMENT OF INDIA

BASIC TRAINING COLLEGE
Banipur

STUDIES IN
Industrial Policy and Development of India (1858-1914)

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Library
Calcutta
25/3, B. C. Road

CALCUTTA
PROGRESSIVE PUBLISHERS
1964

First Published in 1964

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S.C.E R T. West Bengal
Date
Acc. No.

S.C.E R T. West Bengal
Date 7.5.84
Acc. No. 2966

338.9
SEN

PRINTED IN INDIA
BY SRI B. D. SEN AT NABA MUDRAN PRIVATE LTD.
170A, ACHARYA PRAFULLA CHANDRA ROAD,
CALCUTTA-4 AND PUBLISHED BY SRI S. K. BASU
FOR PROGRESSIVE PUBLISHERS, 37, COLLEGE
STREET, CALCUTTA-12

To
The Memory of My Mother
PRATIVA SEN
(1903—1942)

Who taught me to love my country

PREFACE

THIS book deals with the impact of Government spending on India's industrial development, the nature and scale of State enterprise and with State control in relation to joint-stock enterprise and the managing agency system. No detailed account of these aspects of India's economic history has been published.

This book has grown out of a thesis which was approved for the degree of D.Phil. in the University of Calcutta. It is mainly based on primary sources. For four years I have worked at the National Archives of India, New Delhi, to collect my materials. Statistical materials have been extensively used to support general statements, and it is hoped that the materials will be of use not only to economic historians, but also to economists. I refer particularly to the statistics on the value of stores imported through the India Office, of Indian manufactures purchased in India, of goods obtained from Government factories, and on public investment in iron works, coal mines and pioneer factories.

The book is a study in economic history. I have not the competence of an economist to whom the author may appear as an intruding amateur. Of this limitation I am conscious. I still hope that the book, which is the result of actual field work, may be of some use to the economist and to the economic historian.

I would record my debt of gratitude to Dr. S. P. Sen, Reader in History, Calcutta University, under whose supervision I worked. I am also deep in debt to Dr. N. K. Sinha, Asutosh Professor of History, Calcutta University, who guided me in the early stages of my work. Dr. S. N. Sen and Dr. Bhabatosh Datta have kindly helped me with useful suggestions. I must gratefully mention the help and co-operation which I have received from Sri S. Ray, Deputy Director, and Sri V. C. Joshi, Assistant Director, National Archives. My thanks are also due to my colleagues, Sri N. Bose, Lecturer in Economics, City College, Sri P. Chatterji, Lecturer in Economics, Surendranath College, with whom I have discussed aspects of this book, and to my wife, Uma Sen.

S. K. SEN.

ABBREVIATIONS

FD from	Financial Despatch from the Secretary of State
FD to	Financial Despatch to the Secretary of State
CD	Commerce Department
CI	Commerce and Industry Department
ILD	Industries and Labour Department
PPHC	Parliamentary Papers, House of Commons
B	Bundles
Pro. Vols	Proceedings Volumes
Dept	Department
EITA	Engineering and Iron Trades Association
BISCO	Bengal Iron and Steel Company
TISCO	Tata Iron and Steel Company

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CHAPTER I

INTRODUCTION

When we contemplate the economic changes that had taken place in India during the first fifty years of Crown Administration, the development work undertaken by the Government attracts attention. The *tempo* of development no doubt remained slow, nevertheless it had begun. There was an appreciable increase in the level of public expenditure. It may be true that the development work initiated by the Government during this period was largely dictated by the commercial and strategic needs of the ruling class; in the construction of railways, commercial and strategic needs, of course, supplied the main impulse; but the same cannot perhaps be said with regard to irrigation works and telegraphs and the enlargement of the Post Office system. It will be worthwhile to reassess the development work of the period; and it seems that the development work, taken as a whole, unleashed new forces in economic life, the full effects of which were to become evident as time went on.

The single biggest event was railway building, which was largely assisted by the State; the Government provided the railway companies with free grants of land and guaranteed 5 per cent interest on capital; subsequently the Government undertook the construction of State lines. Railway enterprise in India began during the administration of Dalhousie, but in 1856 there were only 273 miles of railroad. In 1904-05 there were 27,728 miles of railroad, of which more than 20,000 miles belonged to the State; in 1913-14 34,656 miles of railway were open for traffic, of which 25,911 were State-owned.[1] Though railway construction in mileage figures, reached an impressive total, India's railway development, whether measured in relation to area or to population, remained low when contrasted with the development of any European country.[2] Nevertheless, railway building profoundly influenced the course of industrial development of India. The railways released the latent potentialities of India for industrial advance. The coal industry could grow and expand because of the railways; the development of the engineering firms was geared to the needs of the railways.[1] Railway workshops had to be founded, and these workshops subsequently developed as important centres of modern mechanical engineering.[2] The development and extension of the railways posed the question of the founding of the iron works under the agency of the State; and when the Tatas embarked on steel manufacture, they depended, in the initial years, not to a small extent, on Government orders of rails.[3] They created new types of employment, and called into being the railway towns. With the extension of the railway system there arose the demand for bridged and metalled communications; it was a stupendous job in view of the enormous size of the country. From 1855 the work of constructing bridges over the rivers on the Grand Trunk Road began; the expenditure on roads and bridges was Rs. 1,27,86,040 in 1867-68.[4] Road building was, however, slow; in 1901-1902 the total length of metalled roads was about 37,000 miles.[5] As the bridges began to be built, there was generated a large and growing demand for bridge-materials; and a new industry, which was foreign to India, sprang up.[6] During the administration of Dalhousie the Public Works Department was created, and some irrigation works were undertaken by the Government, notably in Madras and in the North Western Provinces. In 1867-68 Lord Lawrence's Government initiated the policy of constructing productive irrigation works from borrowed funds; the total capital outlay on irrigation up to the end of 1904-1905 reached 45 crores of rupees.[7] The progress of irrigation works, though tardy, led to the founding of the Thomason College at

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[1] See Chapter VI.

[2] In 1914 there were some 48,000 miles of railroad in Russia, and this was the lowest of any European country.

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[1] See Chapter V.

[2] *Report of the Indian Industrial Commission* (1916-18), pp. 25-26. The railway workshops were "the main training ground for engineering artisans of every class". See Chapter VI.

[3] See Chapter IV.

[4] PPHC, 46, 1868-69.

[5] There were some 136,000 miles of unmetalled road. See *Imperial Gazetteer of India,* Vol. III (1908), pp. 406-10.

[6] See Chapter V. The bridge over the Jamuna at Allahabad was opened in 1865, at Delhi in 1867; the Howrah Bridge over the Hooghly was constructed between 1868 and 1874; the construction of the Sara Bridge over the Ganges commenced in 1910.

[7] *Imperial Gazetteer of India,* Vol. IV (1907), p. 182. In 1903 the total irrigated area was about 44 million acres, in 1913-14 it was about 46.8 million acres. See Gadgil, *Industrial Evolution of India* (1942), p. 130.

Roorkee in 1846, the Poona Civil Engineering College in 1854 and the Shibpur Engineering College in 1856, and of Government Workshops.[1] The Telegraph system also owes its inception to Dalhousie; in 1857 about 4,500 miles of wire had been laid down, in 1866 there were 14,014 miles of telegraph lines.[2] The postal service commenced in 1837; in 1854 the postal department was constituted and post offices began to be extended in towns and villages.[3] After the "Mutiny", the European element in the Army was strengthened; in 1865 the construction of new barracks for European troops at almost every military station commenced. The needs of the Military Department were large and this led to the founding of Ordnance factories, army clothing factories, harness and saddlery workshops. In 1882 the Military Works Service was created to deal with the military works in connection with the Bengal Army; in 1890 the same system was applied to the Madras and Bombay armies. In 1906 the Military Supply Department was constituted under a separate member of the Viceroy's Council which dealt mainly with ordnance, military works, army clothing, medical stores and the Royal Indian Marine.[4] In the interest of India's expanding trade the Government had to devote attention to the extension and maintenance of ports, harbours and docks; practically the whole of India's foreign trade was concentrated in the ports of Calcutta, Bombay, Madras, Karachi and Rangoon. Prior to the constitution of the Port Trusts, it was the job of the Government departments to look after the harbours, dockyards and lighthouses.[5] There was also considerable building activity which was mainly undertaken by the Government.

Concomitantly with the economic measures referred to above, the Government became the single biggest purchaser of "iron and steel work", and a big buyer of miscellaneous manufactures of the most varied description. There emerged the three great consuming departments—the Railway, Military and Public Works Departments.

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[1] See Chapter VI. The Madras Civil Engineering College was affiliated to the Madras University in 1877.

[2] PPHC, 69. 1871.

[3] *General Memorandum on the Development of British Administration in India*, by W. S. Meyer (1907). The number of post offices was 914 in 1861 and 4,487 in 1870. PPHC, 69, 1871.

[4] W. S. Meyer, *Op. Cit.*

[5] See Chapter V. The Port Trusts raised funds by means of loans to meet capital expenditure; the greater part of the loans raised by the Port Trusts was advanced by Government.

Government spending became a crucial factor, therefore, in the industrial development of India. In an under-developed country like India which did not enjoy fiscal protection and was handicapped by an insufficient supply of entrepreneurs, Government spending could play a big rôle in helping and accelerating industrial development. It is not fortuitous that Indian manufacturers wanted a share in the rising Government orders which covered an extensive range of goods. They had to compete with foreign imports; Government orders could help them to compete with foreign manufacturers, hold their own and create a market for their goods; continuity in orders would induce them to invest money in the laying down of expensive machinery, improve the quality of the output and increase production. Government spending could stimulate industrial activity; new industries were likely to be founded in the event of Government purchasing its requirements from local manufacturers. In fact some of the paper mills, woollen factories, leather factories, iron works and engineering firms were founded anticipating the demands of Government departments.[1]

India's handicrafts which had attained an advanced level of development in the past, had decayed and were decaying, along with the centres of production, in the nineteenth century; the most important groups of handicrafts affected were cotton textiles, silk cloths, metal industries, and dyeing and tanning industries.[2] India's handicrafts could not compete with the imported machine-made foreign manufactures; the extension of the railways and the improvement of ports and docks quickened the process of the decay. The ruined artisans and craftsmen, spinners, weavers, tanners, smelters and smith had been crowding into agriculture; the new growing commercial and manufacturing centres (such as Calcutta, Bombay, Madras, Lahore, Karachi, Delhi, Roorkee, Cawnpore and the new mining towns of Raniganj, Jheria and Giridih) could not absorb them. Urbanization was slow, and the pressure on land was increasing. In fact, the increase in the proportion of the population dependent on agriculture had become alarming; the celebrated Report of the Indian Famine Commission (1880) noted it and emphasised the importance of encouraging local light industries.[1] The Dufferin Enquiry of 1888 revealed the low level of living of the mass of agricultural labourers and small tenants who virtually lived on the verge of starvation.[2] The disproportionate dependence on agriculture progressively increased with the increase in population, and industry had to face the baffling problems of the home market. The ruling class chose to pursue a *laissez-faire* policy. It should be remembered that the *laissez-faire* policy did not conflict with the policy of purchasing local manufactures; even within the framework of a *laissez-faire* policy Government departments could have extended their support to local industries.

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[1] See Chapters III, IV, V.

[2] Gadgil, *Op. Cit.*, pp. 40-44. Also see V. Anstey, *Economic Development of India*, pp. 207-8. Dr. Anstey states that in India there was "a much more definite hiatus" than in Europe between the decay of handicrafts and rise of factory industry.

The Crown took over India's administration in 1858; the Government of India Act, 1858, declared that "India was to be governed directly by and in the name of the Crown, acting through a Secretary of State for India, to whom were to be transferred the powers exercised either by the Court of Directors or by the Board of Control".[3] The Governor-General in Council had to obtain the sanction of the Secretary of State (who was furnished by the Act of 1858 with a Council) with regard to the policy of purchasing stores; the India Office maintained a close scrutiny and control over the stores purchase policy. From 1858 to 1875 stores were imported through the India Office. India had to pay for these stores in sterling. Within two decades of the Crown Administration there was a formidable increase in India's sterling payments; the Home Charges had risen from about £ 6 million in 1856-57 to about £ 15 million in 1876. The financial difficulties of the Government were aggravated by the exchange problem; in 1873-74 the first note of alarm was sounded when the gold-value of the rupee declined; from 1877-78 the exchange problem had become a "continually growing evil".[4] There was a rising pressure from Indian manufacturers who wanted a share in the Government orders. The Stores Rules were relaxed in 1876, 1880, 1883, 1909, 1912 and 1913.[5] Indian industries supplied paper, woollen goods, coal and coke, hardware and cutlery, building and engineering materials, cotton and linen and silk goods, cordage and rope, paints and colours, oils, tools and plant, tin, iron and steel. The list is impressive and points to the potential of India as a manufacturing country. We will have to examine how far the manufacturing capacity of India was developed. Did Government spending stimulate industrial enterprise in India? Did it act as the midwife of industrial capitalism in India?

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[1] See Chapter II. A severe famine devastated parts of India in 1876-78; the Famine Commission (appointed in 1878) presented its Report in 1880; it was followed by the famines of 1896-97 and of 1899-1900.

[2] See Chapter V.

[3] W. S. Meyer, *Op. Cit.* Expenditure from Indian revenues both in India and elsewhere was made subject to the control of the Secretary of State in Council (Section 41 of the Act).

[4] See Chapter V.

[5] See **Chapter II.**

Here we come to the crucial question of the development of iron and steel industry on which modern industrialisation is based. In the words of Knowles, "The real change comes in any country when the iron and steel industries begin to be successful........... The development of the metallurgical industries means the real industrial revolution. England, Germany and the United States of America all started their iron and steel industries on the modern scale before they started their textile factories".[1] As the development work undertaken by the Government began to proceed, there was generated a large and growing demand for a wide range of stores for railways, public buildings, irrigation works, ordnance factories. Since Lord Mayo's financial decentralisation scheme of 1870 and particularly since the passing of the Acts of 1883-84 (for which credit goes to Lord Ripon's policy of liberalising municipal administration in India), the municipalities were given greater powers to deal with urban sanitation, and the construction of water-works, almost entirely by means of funds borrowed from the Government, began to make progress; and there was generated a large demand for iron for water-works and drainage and sewerage systems.[2] During the second half of the nineteenth century India became a growing market for the products of British iron and steel industry. Jenks states that the iron for Indian railways was almost exclusively supplied from British orders.[3] In 1863 the duty on imported iron was reduced from 10 to 1 per cent. Machinery was on the free list.[4] Anticipating the demands for iron and steel in the country foreigners and Indians founded mercantile houses; these firms dealt in imported stores and should be clearly distinguished from manufacturing firms. The mercantile firms could hope for handsome profits so long as imported European goods were in demand and Indian

[1] L.C.A. Knowles, *Economic Development of the Overseas Empire*, p. 443.
[2] See Chapter V.
[3] L. H. Jenks, *Migration of British Capital*, p. 207.
[4] See Chapter IV.

industries remained weakly developed. It may be mentioned that they imported, apart from iron and steel, a wide range of European goods: machinery, building and engineering goods, tools and plant, woollen goods, cotton and linen and silk goods, coal and coke, explosives, paper and paste-board, oils. The mercantile firms had been clamouring for relaxation of the Stores Rules.[1]

It is a commonplace that iron and steel industry and engineering industry are inter-dependent; the development of iron and steel industry would always depend on the existence of a large engineering industry to absorb its products. The scope of the engineering industry considerably widened during the second half of the nineteenth century. Bridges and military barracks were being built; the ports and docks were being equipped with wharves and jetties, sheds and warehouses, cranes and dredgers; water-works and drainage and sewerage systems were being completed in the Presidency towns of Calcutta, Madras and Bombay and extended in the growing towns of Agra, Allahabad, Cawnpore, Meerut, Rangoon. With the extension of the railway system there grew up a large demand for rolling stock, stations and goods sheds, additional sidings, signalling apparatus. Cotton mills, jute mills, paper mills, sugar mills, rice and flour mills, tea gardens, coal mines had made considerable progress, and the demand of machinery and tools was large and growing.[2] It is noteworthy that some engineering firms were founded in this period and old firms extended their operations. The Indian Engineering firms undertook the manufacture of wagons, points and crossings, signal posts, trollies, cranes, railway main line bridges, bridge-materials, sanitary appliances, lamp posts, bolts and nuts. The engineering industry was in the initial phase of development; and it is not fortuitous that the engineering firms eagerly expected Government support in the shape of orders "in respect of bridges, railway material, rolling stock and similar stores".[3] What was Government policy with regard to the development of iron and steel industry and engineering industry? Did Government spending stimulate the development of these industries? It was precisely this aspect of Government policy which was carefully examined by the Stores Committee of 1906. The Report of the Stores Committee was not published despite repeated requests from the Indian Industrial Conference. We will copiously use this valuable Report (to which the present author fortunately had access) to assess Government policy towards these industries which were of crucial importance for India's industrialisation.

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[1] See Chapter II.
[2] See Chapter V.
[3] *Ibid.*

It is undeniable that capitalist industry had shown a quite remarkable development during the second half of the nineteenth century.[1] Some undertakings grew to considerable size. But with the exception of cotton textiles and the Tata Iron and Steel Industry the industries that developed and flourished were frequently foriegn-owned and foreign-financed; they were also staffed by foreign managers and technical personnel.[2] There was considerable export of British capital to India. But it seems that railways, tramways, coal mines, jute mills, tea gardens, paper mills, woollen mills, gold mines were the favourite objects of British capital in India. Did British capital come in to assist in the development of iron and steel industry and engineering industry? This has to be examined in order to assess the rôle of foreign capital in helping India's economic growth.

During the second half of the nineteenth century a "public sector" had come into existence. The State Railways constituted the single biggest State undertaking. The Government founded railway workshops, ordnance factories, canal workshops, postal workshops, harness and saddlery factories, cotton gin factories, army clothing factories, printing presses. The State incurred considerable expenditure to import stores for State Railways and ordnance factories and the Workshops. The possibility of developing the iron resources of India could not be ignored when railways were being constructed and extended; and the State became engaged in the manufacture of iron and in the working of coal mines. The policy pursued was one of trial of State undertaking; public investment in such undertakings was on a small scale. The State worked the Burwai Iron Works and the Kumaon Iron Works, but the experiments were not successful. The Barakar Iron Works was worked as a State enterprise between 1882 and 1889, and the Iron Works achieved some measure of success in the production of pig iron and iron castings. Some coal mines were worked by the Government in Central Provinces, Central India, Baluchistan and the Punjab. The coal mines served the important purpose of supplying the railways with fuel. In 1896 the steel bar rolling mill was inaugurated in the Cossipore Ordnance Factory, and in 1901 it was engaged "in rolling steel of many sections".[1] The Government factories successfully undertook the manufacture of iron, steel, building and engineering materials, coal, tools and plant, leather, chemicals and drugs, printing and lithographic materials, scientific instruments, woollen goods, cotton and linen and silk goods. The railway workshops, ordnance factories and other Government factories gave employment to several thousand Indian workers who worked, though not always happily, under European supervision.

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[1] Capitalist industry was concentrated in some regions; whole areas remained undeveloped. Factory industries in parts of Bengal, Bombay, Ahmedabad, Cawnpore, Madras looked like industrial "islands" in a vast agricultural sea.

[2] Cotton mills of Bombay imported textile machinery from Britain; mill managers and heads of departments were Lancashire men; the transfer to Indian management started in 1887; of the managers and mechanical engineers and weaving masters in Bombay mills in 1894 42.4 per cent were Europeans. See D. H. Buchanan, *Development of Capitalist Enterprise in India*, pp. 210-11.

It has been a constant theme of Indian economic historians that the Government pursued a *laissez-faire* policy and stubbornly opposed a policy of protection to infant industries. It seems that the focus of economic enquiry should change. Could the Government consistently pursue a *laissez-faire* policy? In 1882 all import duties were abolished except on salt and liquor, and Lord Ripon's Government prided in the fact that the Indian Customs Tariff had been remodelled on the basis of "free trade principles".[2] In 1894 financial considerations led to the re-imposition of a general import duty. The Government could not avoid participation in the productive process and had to be engaged in the manufacture of iron and in the working of coal mines. The State was obliged to step in when private enterprise did not come forward, without financial assistance from the State, to undertake the heavy capital expenditure which railway building in India entailed. The State also directly undertook the construction of railways. The State incurred considerable expenditure in the development of ports and harbours. A great body of Company Law had to be developed in order to regulate and control joint-stock enterprise; and greater State control was in the offing. *Laissez-faire* did not correspond to reality.

In this brief review of the economic scene in India during the closing decades of the nineteenth century a number of questions have been posed, and in the following pages we will endeavour to examine these questions and seek answer to them. It will be our main purpose to present the views of policy proclaimed by Governors-General and Secretaries of State, the *dramatis personae* of the period, and examine how they grappled with a complex situation, and whether they fared ill or well.

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[1] See Chapter VI.
[2] See Chapter IV.

CHAPTER II

PURCHASE OF STORES

WHEN the Indian Government discovered that "Government meant development", and began to proceed with the construction of railways, roads, telegraphs, buildings, bridges and irrigation works in a vast country like India, there was generated a growing demand for a wide range of goods, especially for iron and steel goods. There emerged what have been aptly called "the three great consuming Departments"—the Railway, Military and Public Works Departments. The various Civil Departments also purchased their requirements. The Indian Government became the single biggest purchaser of iron and steel work in the country and a big buyer of a variety of goods.[1] In the Accounts of the Home Treasury of the Government of India, these goods are described as "Stores". The India Office through the Stores Department supplied these stores on receipt of indents from the Governor-General in Council. The practice followed by the India Office was to invite contractors to tender for their supply on the principle of public competition. Freight (overseas freight was quite heavy) was also engaged by public competition.[2] The Government of India issued from time to time, with the sanction of the Secretary of State, rules which governed the purchase of the stores. It is necessary to review the Stores Rules, which indicate fairly the trend and direction of the policy of the Indian Government with regard to local industrial enterprise. The question of the purchase of the stores became invariably linked with the wider question of the encouragement of local industry. If "protection" was an anathema to the votaries of *laissez-faire,* Indian industries could at least count on a substantial share of the rising government orders and receive encouragement, particularly in the initial years of development. This was precisely the demand raised by Indian manufacturers.

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[1] Apart from railway stores the indents reveal a wide range of goods—coal and coke; paper; ink; red tape; padlocks; promissory note forms; currency notes; clothing for the army; scientific apparatus; lead seals; notice plates and post boxes for post offices; sluice gates, steel tubes, pumps for irrigation works; machinery; agricultural implements; printing plant; weighing machines; microscopes; cycles; motor cars; oils; chemicals; paints and colours; iron safes; hand-cuffs.

[2] FD from, No. 8, January 11, 1870, B. It seems that contractors sometimes resorted to fraud, and fines and penalties incurred by them in providing stores and freight amounted to £ 26,643 in 1873-74. FD from, No. 23, January 28, 1875, B.

The Stores Rules should now be examined in order to understand whether and to what extent the policy of the Government was a help or hindrance to Indian industrial enterprise. In the Financial Despatch of the Secretary of State, dated 27th December, 1862, it was laid down that all articles manufactured in England should only be procured through the Stores Department of the India Office.[1] There was no question of purchasing any kind of Indian manufactures in the Indian market. The policy of purchasing stores in the local market was first formulated in Lord Salisbury's Financial Despatch, dated 7th December, 1876. The purchase of stores in the local market was subject to the conditions that "nothing except articles of Indian origin shall be purchased or ordered in India unless it can be paid for on delivery after approval there and that no advances shall be made to any agent or firm for such service".[2] The Government of India adopted a resolution, calling upon Local Governments and Officers "to suggest and discuss" what steps could be taken to substitute Indian manufactures for European manufactures and to encourage local manufacture.[3]

The Stores Rules were relaxed with the primary object of reducing the payments in England which had greatly increased. The following figures will reveal the expenditure on "stores for India".[4]

1856-57	£	1,003,643
1866-67	£	1,157,378
1867-68	£	1,148,277
1868-69	£	1,584,213
1869-70	£	1,414,116
1870-71	£	1,425,150
1871-72	£	1,249,040
1872-73	£	1,146,116
1873-74	£	1,156,535
1874-75	£	1,595,821
1875-76	£	1,544,643

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[1] FD from No. 477, Dec. 7, 1876, B. The Financial Despatch of 1862 has been quoted in this Despatch.

[2] *Ibid.* This relaxation was not extended to iron and steel goods. See Chapter V.

[3] Resolution of the Government of India, Public Works Department, No. 70, October 26, 1877 (CD—Accounts and Finance, November, 1877, No. 19, B).

[4] These figures have been taken from the Accounts of the Home Treasury of the Government of India. Expenditure on "Stores for India" includes freight.

The upkeep of the Stores Department (to pay for buildings, wages of artificers and labourers, commission of professional inspectors, travelling expenses, ground-rent of premises, rates and taxes, repairs) was not an insignificant item of expenditure, and such expenditure also was rising rapidly. The following figures have been taken from the Accounts of the Home Treasury, which will show the expenditure on the upkeep of the Stores Department[1] :

1856-57	£ 9,361
1860-61	£ 9,311
1868-69	£ 21,517
1869-70	£ 23,170
1870-71	£ 21,777
1873-74	£ 20,280

It will be beyond the scope of the present enquiry to discuss the menacing problems of Indian finance. This is not to minimise its importance, but to emphasise it. To discuss the subject in the abstract will not be useful for our purpose. It will be necessary, however, to deal, cursorily and in passing, with the question of the Home Charges, because this is a cognate subject which influenced in many ways the economic policy of the Indian Government. It is known that India had to meet the regular demands of the Home Treasury ; and the Home Charges were annually remitted to England "to pay interest on money expended in India on railways and irrigation works and for other purposes of the Government, to pay for stores annually required for India, charges for effective and non-effective services of British troops on the Indian Establishment, furlough and retired pay of Civil and Military Officers and servants of the Government and other expenditure".[2] In 1856-57 the Home Charges totalled £ 5,147,164 ; by 1876 it had risen to about £ 15 million. This enormous increase was due to the changes made since 1857 in regard to "raising loans in England instead of in India, in the constitution of the European Army in India, and the growth of interest on railway capital".[1] The formidable increase of the Home Charges put a serious strain on Indian finance. After 1873 the impact of the currency problem began to be felt. The gold-value of the rupee rapidly fell and the annual payments in England by the Government were increased proportionately.[2] It is interesting to note that the Indian public was becoming critical of the financial position. The British Indian Association of Calcutta in a memorial to the Indian Government, dated 3rd April, 1868, complained of "inordinate growth both in expenditure and taxation".[3] In a memorial to the Secretary of State "some inhabitants of Calcutta and Umballa" complained of the increase of the income tax to 3.1/8 per cent and pleaded for the appointment of a Royal Commission to enquire into the administration of the Indian finances.[4] Dwarakanath Guptoo and some inhabitants of Bikrampur (Dacca) addressed a memorial to the Secretary of State with a similar request in the same year.[5] This is not to suggest that the memorials had much effect on the Indian Government. The memorials were rejected by the Secretary of State. But the memorials reveal the feelings of "the articulate classes" on the issues of the day.

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[1] The Stores Department was created and maintained for the purpose of purchasing, inspecting and despatching goods indented for from India. The total cost of the establishment maintained at the India Office for the purpose of purchase, inspection and shipment of stores would be much higher if the salaries paid to the Director-General of Stores, Consulting Engineer and other officers are taken into account. See Chapter VIII.

[2] FD from, No. 279, July 13, 1876, B.

In the Financial Despatch of the Secretary of State, dated 27th May, 1880, the objects of Her Majesty's Government in relaxing the Stores Rules were amplified. The objects desired were, firstly, reduction of the amount of bills drawn by the Secretary of State in Council upon the Indian Government, secondly, encouragement of "the local purchase of, and payment for, anything which the local market would supply", and thirdly, "fostering the development of local industry".[1] The Government of India issued the Stores Rules in November, 1880, in which it was laid down that articles of Indian manufacture should be substituted for European articles "whenever it is possible to do so, even at some temporary increase of cost".[2] At last it was stated that the object of Her Majesty's Government would be "fostering the development of local industry", and that Indian manufactures would be purchased "even at some temporary increase of cost".[3]

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[1] FD from, No. 420, December 2, 1869, B. The European element in the Army was strengthened after the "Mutiny". In 1863 the Army had 65,000 Europeans and 140,000 Sepoys. The Army was considerably increased in later years.

[2] H. L. Singh, The Indian Currency Problem, 1885-1900, (*Bengal Past and Present*, January-June, 1961). In 1876 the Government of India noted that the fall of a penny in the exchange meant that about a crore of rupees had to be found to meet the expenditure (FD from No. 368, October 13, 1876).

[3] FD to, No. 86, April 3, 1868, B.

[4] FD from, No. 252, August 4, 1870, B. Income tax which was first introduced by James Wilson in 1860 came to an end in 1865. It was reintroduced in 1867-68 ; its amount was raised in the middle of the year 1869-70 : in 1870-71 it reached "its maximum of a general tax of 3.1/8 per cent." It appeared to the Secretary of State that the income tax "is better calculated than any other tax which has yet been proposed to reach the wealthy mercantile and trading classes". (FD from, No. 336, August 6, 1873). For an account of the income tax see *Imperial Gazetteer of India, Vol. IV*, pp. 266-68 ; *Cambridge History of India, Vol. VI*, p. 317.

[5] FD from No. 270, August 16, 1870, B.

The Indian Government began to give effect to the Rules. In 1879 orders for the substitution of Bally Mills paper for European printing paper were issued. These orders received the approval of the Secretary of State.[4] In 1881 the Government of India adopted a number of resolutions in the Department of Finance, in which the substitution of Indian manufactures for European manufactures was recommended. It was stated that the Government of India would approve of contracts with Indian manufacturers for the supply of the articles "for a term of years".[5] Mention was made of the local firms which could supply the articles.[6] A list was prepared showing the articles which should be obtained of Indian manufacture. It was pointed out that the list was not exhaustive, and with further enquiry new articles of Indian manufacture might be included in the list.[1]

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[1] FD from, No. 166, May 27, 1880, B. It may be of interest to note that the English Press was demanding an enquiry into "the whole system of India Office contracts". The *Englishman* wrote on June 12, 1880, that the contract system was a "vicious one", since the Government of India had been compelled to pay "highest possible price for anything *that it required*"; the contracts were "conducted entirely in the interest of certain cliques". (CD—Accounts and Finance, November, 1880, B).

[2] FD to, No. 366, November 9, 1880, B.

[3] The Indian Famine Commission, appointed by Lytton's Government, in 1878, published its Report in 1880 and noted that "a main cause of the disastrous consequences of Indian famines and one of the greatest difficulties in the way of providing relief in an effectual shape is to be found in the fact that the great mass of the people directly depend on agriculture, and that there is no other industry from which any considerable part of the population derives its support", and recommended a policy of encouraging local manufactures.

[4] FD from, No. 94, March 1879, B.

[5] CD—Accounts and Finance, November, 1881, B. Ordinarily such contracts were to be made for five years in the first instance. To these Resolutions was attached a list of articles of Indian manufacture: Brown paper, blotting paper, cartridge paper, padlocks, red tape, scissors, paste boards, woollen cloth, long cloth, twine and rope, steel pen holders, chemicals, locks, coal and coke, handcuffs.

[6] *Ibid.* Woollen cloth (The Cawnpore Woollen Mills, The Egerton Mills, Punjab; Bangalore Woollen Mills); Chemicals (Waldie & Co., Calcutta); Long cloth (Indian Cotton Mills); Padlocks (Roorkee Workshops); Linseed Oil (Gouripore Co., Calcutta); Handcuffs (Jessop & Co., Burn & Co., Richard-

Lord Ripon's Government reviewed the results attained in the substitution of Indian manufactures for European manufactures. It was pointed out in the Financial Statement of 1882-83 that the Civil Departments obtained a large part of their requirements from Indian sources, but the Public Works Department had not been able "to do much in the same direction", since the requirements of this Department mainly consisted of girders, rails and articles made of wrought iron. Nevertheless, it was a good beginning. Indian industries supplied cotton and woollen goods, building materials such as cement and fire-bricks, chemicals, leather, oils, paints, paper, rope and twine, silk goods, printing materials, scientific instruments. The list indicated "the great capacity of India as a manufacturing country". The Government hoped that capital would be forthcoming to develop the manufacturing capacity of India if "the prospect was held out of a continuous demand on the part of the State for all the articles which it requires". It was essential that indents on England should be carefully examined in detail; in fact without a close scrutiny of indents, no considerable advance in the direction of substituting Indian manufactures for European manufactures could be made.[2]

During the period of Lord Ripon's administration, an important resolution was adopted which was to guide the Government in the matter of purchase of "*bona fide* Indian manufactures" (other than iron and steel work) in the years to come. It was an important policy declaration, which Indian manufacturers generally welcomed. A relevant section of this Resolution, dated 10th January, 1883, reads as follows: "The Government of India is desirous to give the utmost encouragement to every effort to substitute for articles now obtained from Europe, articles of *bona fide* local manufacture or of

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son & Cruddas, Apcar & Co.); Twine and rope (Ahmuty & Co.); Blue-black *ink* (Messrs. Sherafally Badruddin and Hormasji Rastmaji of Bombay; Babu Amritalal Roy, Beliaghata, Calcutta); coal and coke (Bengal coal mines).

[1] CD—Accounts and Finance, October, 1882, B.
Mention may be made of some of the important articles noted in the list: Lanterns; Padlocks; Handcuffs; Chemicals; Kerosene oil; Long cloth; Woollen goods; Paper: Ink; Leather goods.

[2] Financial Statement of the Government of India, 1882-83 (PPHC, 181, 1882). In 1881-82 the value of stores imported through the Secretary of State was £ 1,332,468; in 1882-83 it was £ 1,085,986.

indigenous origin; and when articles of Europe and Indian manufacture do not differ materially in price and quality, the Government would always be disposed to give the preference to the latter; and the Governor-General in Council desires to remind all officers of Government that there is no reason why articles manufactured in India should not be obtained locally, even although the raw material necessary for their manufacture may have been originally imported from Europe. It is most desirable to bear in mind the distinction between articles of European manufacture and articles produced or worked up in India from imported material; the former should not, save in exceptional cases, be purchased in the local market, while the latter should by preference be purchased locally whenever the quality is sufficiently good and the price not higher than the cost of laying down the imported article. There are many articles which may not be immediately obtained in the local market but which can be made in the event of Government encouraging the manufacture".[1]

What was new in this new policy declaration was the insistence on the importance of purchasing the articles of *"bona fide* local manufacture" in the local market. It was also stated that the Government of India would give preference to articles of Indian manufacture when "articles of European and of Indian manufacture do not differ materially in price and quality". Government Officers could now freely obtain articles of Indian manufacture for the use of their Departments. An important principle was laid down, and the Government of India did not depart from it. In the new Stores Rules issued in 1909, in 1912 and in 1913, this principle of purchasing *"bona fide* local manufactures" in the local market was retained.[2]

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[1] FD to, No. 117, April 28, 1884; See the *Report of the Stores Committee* (1906). (ILD—Confidential, Stores, 1906).

[2] "All articles which are produced in India in the form of raw materials, or are manufactured in India from materials produced in India, should, by preference, be purchased locally, provided that the quality is sufficiently good for the purpose, and the price not unfavourable". (Rule 1, Stores Rules, 1909). The Stores Rules of 1913 will be found in Appendix A.
The Indian Industrial Conference held at Lahore in 1909 adopted a resolution on the purchase of stores by Government Departments and noted that the new rules marked "a distinct advance in the policy of the Government towards the encouragement of indigenous industries." (CD—Industries, March, 1910, File No. 6).
The Seventh Session of the Industrial Conference held at Calcutta in 1911, adopted a resolution on the Stores Rules of 1909 and urged upon "the leaders of different provinces the necessity of vigilance to secure the effectual and complete carrying out" of the rules. A Committee with R. N.

With regard to iron and steel work, however, relaxation was slow in coming, and Indian manufacturers felt that there had been a retreat from the Resolution. This aspect of the Government's policy will be taken up in another chapter.

From 1882-83 the Government of India had begun to submit to the Secretary of State Annual Return of Expenditure on Stores. The following figures have been collected from these Returns.[1] It is noteworthy that no special agency was maintained in India for the purchase and inspection of articles manufactured in India; the purchase of stores in India was entrusted to the officers of various Departments.

VALUE OF STORES
MANUFACTURED IN INDIA

Year	Rs.
1882-83	39,42,421
1883-84	70,71,667
1884-85	52,87,203
1885-86	58,29,380
1886-87	67,74,737
1887-88	—
1888-89	—
1889-90	78,39,286
1890-91	87,92,773
1891-92	1,06,52,346
1892-93	1,16,15,698
1893-94	1,21,97,565
1894-95	1,27,25,650
1895-96	1,30,07,578
1896-97	1,27,34,259
1897-98	1,07,48,458
1898-99	97,90,999
1899-1900	1,29,84,039
1901-02	1,76,08,832
1902-03	1,85,20,080

(Contd.)

Mukherji, D. E. Wacha, Vithaldas D. Thackersey and others was formed to report on it. (CD—Industries, File No. 2, February, 1912).

[1] These Returns will be found in the Financial Despatches of the Governors-General in Council to the Secretaries of State (1882-83 to 1913-14).

VALUE OF STORES (*Contd.*)
MANUFACTURED IN INDIA

Year	Rs.
1903-04	1,84,69,741
1904-05	2,01,82,917
1905-06	1,18,15,766
1906-07	1,22,26,385
1907-08	1,18,76,417
1908-09	96,16,890
1909-10	81,23,297*
1910-11	77,96,921
1911-12	81,74,636
1912-13	77,91,740
1913-14	1,13,40,711

The Returns reveal that Indian manufactures covered a wide range of goods. Indian industries supplied coal and coke, paper and paste-board, building and engineering materials, chemical products, drugs and medicines, cordage and rope, cotton and linen and silk goods, hardware and cutlery, leather and leather goods, paints and colours, oils, scientific instruments and apparatus, articles made of wood, woollen goods, tools and plant, canvas, tin, iron and steel. The purchase of steel, machinery, agricultural implements, iron wire, steel wire, glassware was quite insignificant.[1]

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* Coal and coke was excluded from the Returns from 1909-10 and tin from 1908-09 ; there was a decrease of 15 lakhs in the value of stores due to the exclusion of coal and coke from the Returns. CD—Stores, January, 1911, File No. 47.

[1] For the amount of expenditure on India-made iron, steel and machinery see Chapters IV & V.
The Government of India published a catalogue of Indian manufacturers in September, 1909, in order to acquaint indenting officers with the local sources of supply ; the catalogue mentions 39 cotton mills ; 9 woollen mills ; 9 glass works ; 9 paper mills ; 6 cement works ; 69 engineering and iron works ; 37 tanning and leather works ; 23 pottery works ; 28 chemical works ; 6 manufacturers of paints and colours ; 21 firms of locks and padlocks ; 27 cutlery works ; 27 manufacturers of inks ; 12 firms of pencils and pens; 13 safes makers; 6 aluminium works (CD—Stores, September, 1909, File No. 87). The list, though not exhaustive, indicates the potential of India as a manufacturing country. There is no mention of the jute mills and tea gardens, since Government departments did not purchase jute or tea.

SENIOR BASIC TRAINING COLLEGE

Before we examine the general effect of the relaxation of the Stores Rules on local enterprise, we will discuss another aspect of the stores purchase policy. Apart from Indian manufactures the Indian Government also purchased European stores in the local market. Indian mercantile houses, native and foreign, imported European stores for sale in India. They should be clearly distinguished from manufacturing firms. It is a commonplace of economic history that mercantile firms are most interested in middlemen's profits and less interested in the development of industries.[1] They have little rôle to play, therefore, in the reshaping of the economy. Indian mercantile houses could fatten on easy profits so long as imported European goods found a ready sale in the country. It is an important point to remember in order to comprehend sufficiently the implication of relaxation of rigidity of the procedure in the matter of purchasing European stores imported in India. Indian mercantile houses sought for such relaxation again and again.

It has been noted that the Financial Despatch of the Secretary of State, dated 27th December, 1862, laid down that articles manufactured in England were to be obtained through the Stores Department of the India Office. In the Financial Despatch of the Secretary of State, dated 13th March, 1879, there was some relaxation of the rules. It was laid down that "as regards the provision of stores not produced in India, the practice of dealing with merchants or agents on the spot should be adopted rather than that of issuing direct orders for the supplies to persons in England".[2] The Government of India issued Stores Rules in November, 1880, permitting the purchase of European articles procurable in the local market, "when it would be economical to do so", "when stores indented for from Europe have not arrived", and "when they are perishable articles".[3] In the important policy declaration of the Government of India of 1883, the prohibition against the purchase of European articles "otherwise than through the agency of the Stores

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[1] "It is the opinion of a leading native merchant that it is much easier to make money by an agency in imported goods, than by investment in industrial enterprise". (*Report on the Industries of Bengal* by J. G. Cumming, CD—Industries, October, 1908). Like-minded merchants, both native and foreign, were not very few. Foreign merchants had a tendency to carry with them their accumulated capital. "No sooner does capital accumulate from successful trade or agency than it is carried home by the possessors in the same manner as the accumulated savings of your servants". (G.G. in C. to Court, January, 1827).

[2] FD from, No. 94, March 13, 1879, B.

[3] FD to, No. 336, November 9, 1880, B.

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Department" was repeated, but the purchase of European articles in the local market was permitted on the following grounds—"when for any special reason the purchase in India of European manufactures might be more economical", "when articles indented for from England had not arrived and inconvenience to the public service might be anticipated from delay in the supply" and "when the articles were of a perishable nature".[1] These orders were repeated in Lord Cross's Despatch, dated 28th February, 1889.[2]

The objections against the purchase of European manufactures in the local market may now be summarised. With his Financial Despatch, dated 27th May, 1880, Hartington enclosed the reports of the Director-General of Stores, Director of Army Contracts and the Inspecting Engineer for State Railways and Engineering Supplies of India Office. The Director-General particularly objected to the purchase of railway plant and materials in the Indian market, because these would require "careful selection" and "great discrimination as to quality and workmanship". He countered the argument that local market would be established and industries would be fostered through local purchase with the following statement: "But will not actual manufacturers in India be sufficiently encouraged by a knowledge of the fact that the Government is ready and anxious to provide for its wants by purchase in India of all articles produced in the country?" The Inspecting Engineer observed that no inspection would be possible if European articles were purchased in India. Indian firms imported machines or stores which were not of first quality. In Sheffield he "came to a large lot separate" and was informed that "it was rubbish for an Indian market". Lastly, the commissions that the Indian houses would demand "will certainly far exceed the amount (about 2 per cent.), which the Stores Department now costs the Government".[3]

The issue was raised by the Stores Committee which was appointed by the Government of India in 1906. The Committee recommended relaxation of the rules on the grounds of economy and convenience. Delays occurred not infrequently in the receipt of articles indented for from England, and this caused much incon-

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[1] FD to, No. 117, April 28, 1884, B.

[2] FD from, No. 139, August 23, 1900.
(Lord Cross's Despatch has been quoted in full in this Despatch).

[3] FD from, No. 166, May 27, 1880, B. Notes of A. A. Jopp, Director-General of Stores; Evan C. Nepean, Director of Army Contracts; H. Hyde, Inspecting Engineer.

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venience to the Departments. It was sometimes not practicable to foresee accurately the demands of the Departments, with the result that unused stores piled up. The Committee made particular mention of those houses which were the branches of well-established English firms, and observed that "their position is not that of middlemen".[1] To Morley's Despatch, dated 18th October, 1907, is annexed the report of the Director-General of Stores on the recommendation of the Stores Committee. The Director-General maintained that India was a dumping ground for stores which could not be sold in the home market: "There can be no question that rejections by India Office Inspectors, notably of corrugated sheets, tin sheets, cloth, drill, among many others, are invariably shipped to the Indian market when it is known that there is a Government as well as a private demand". With regard to the branches or agencies of English firms in India, he pointed out that the cost of maintaining such branches was considerable, and they would charge an extra price to cover the cost.[2]

The Government of India generally approved the recommendations of the Stores Committee and the Secretary of State sanctioned some relaxation of the rules. In the Stores Rules, issued in 1909, in 1912 and in 1913, the following modifications were made—in the case of important construction works the supply of English stores might be included in contracts let to Indian firms of standing; special purchases of European stores could be made in India "when, owing to the greater promptitude of supply, an economy can be effected"; the list of articles which should be purchased in India was extended.[3] The Government still endeavoured to pursue a cautious policy, and the mercantile firms did not get what they wanted.

The expenditure on the purchase of imported European manufactures in India was as follows. The figures have been collected from the Returns.

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[1] *Report of the Stores Committee* (1906), (*Ibid*) pp. 18, 20, 21, Mention was made of Messrs. Crompton and Co., Marshall and Co., James Simpson and Co., Wilkinson, Reywood and Clark.

[2] CD—(Stores), 1908. See Enclosures.

[3] The Stores Rules of 1913 will be found in Appendix A. Articles which could be purchased in India as mentioned in the Stores Rules of 1913, were the following: (i) articles of perishable nature; (ii) explosive; (iii) block tin; (iv) wines and spirits; (v) kerosene oil; (vi) plant and materials for electric installations intended to take current from existing centres and small electrical power and lighting plants; (vii) Australian timber; (viii) Australian copper; (ix) Italian marble; (x) British Columbia timber; (xi) plant and materials for small gas installations.

VALUE OF IMPORTED EUROPEAN STORES

Year	Rs.
1882-83	40,86,796
1883-84	65,18,916
1884-85	40,89,492
1885-86	43,22,192
1886-87	44,18,836
...	...
1890-91	31,74,528
1891-92	35,80,569
1892-93	32,12,095
1893-94	24,51,796
1894-95	22,01,984
1895-96	21,49,861
1896-97	26,68,275
1897-98	17,25,221
1898-99	15,92,202
1899-1900	33,32,301
1900-01	44,39,958
1901-02	43,04,190
1902-03	39,19,249
1903-04	38,64,353
1904-05	45,98,142
1905-06	50,73,573
1906-07	64,96,123
1907-08	47,01,992
1908-09	39,29,510
1909-10	22,66,507
1910-11	29,72,261
1911-12	29,65,068
1912-13	39,78,088
1913-14	55,74,381

The expenditure on imported European stores was much less than that on Indian manufactures. It seems that the "rigid rules" were rigidly enforced. Indian mercantile houses did not, however, lose their business in the country. The Port Trusts and Municipalities and private concerns purchased a good part of their large requirements from these houses, and it was argued that Government Departments could, as Post Trusts and Municipalities did, rely on them on the ground of economy.[1] Private demand stood the mercantile firms in good stead.

We will presently see that Government spending helped the growth of Indian coal, paper and woollen industries (and also some other small industries), especially in the initial period of their development. In the absence of a policy of fiscal protection, Government spending proved particularly helpful to the nascent industries.

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[1] *Report of the Stores Committee* (1906), p. 22.

It would, however, be fatuous to overestimate the part played by Government spending in India's industrialisation. It has already been noted that the total expenditure on the purchase of "*bona fide* Indian manufactures" did not exceed two crores of rupees and that too only in the year 1904-05. Even after the publication of the new Stores Rules in 1909 the amount of expenditure did not rise, so that the Secretary of State issued a Despatch on the subject in 1912 and noted that "the purchase of locally produced stores has shown little or no expansion during the past five years".[1] The reply sent by the Governor-General-in-Council on May 28, 1914, is revealing. The "slow growth of industrial enterprise in India" was admitted. India's industrialisation was a hope of the future. There was no mention of the ways and means the Indian Government must pursue to attain this objective. The Despatch reads: "While the expenditure on account of the purchase of articles of Indian manufacture varies in accordance with the periodical requirements of the large purchasing Departments, there is a general consensus of opinion on the part of Local Governments that the principal cause operating to check increased recourse to local manufactures is that mentioned in the ninth paragraph of our Despatch, No. 50, dated 28th August, 1913, namely, the slow growth and the inefficient standards of industrial enterprise in India .... we trust that, as India develops industrially, the natural advantages enjoyed by local manufacturers by immunity from oversea freight charges, lower transport charges and greater promptness in supply, may lead to Indian sources being utilised for the purchase of stores to a greater extent than is at present practicable".[2]

[1] Despatch from, October 11, 1912, CD—Stores, June, 1914.

[2] CD—Stores, June, 1914.

The matter was examined in the Public Works Department, Railway Department, Army Department and in the Commerce and Industry Department. There was a general consensus of opinion among the Officers that "every encouragement to local purchase" had been given; the Catalogue of Indian manufactures, compiled by the Director-General of Commercial Intelligence, should be made more comprehensive in order to help indenting officers to know the local sources of supply; the requirements of the Departments varied from year to year. P. Hawkins of PWD noted that "special plant and machinery for large work" had to be procured through the India Office. The Railway Department also had to import railway stores through the same agency (For the Notes prepared by the Departments, see File No. 82, 1912, CD—Stores, June, 1914). Local Governments also conducted an enquiry into the matter: it was revealed that purchase of stores "the aggregate value of which does not exceed Rs. 1,000" was excluded from the Returns; so were stores purchased for "general usage"; so were purchases made by contractors on behalf of Government; these items accounted for

After nearly half-a-century of Crown Administration the prospects of India's industrialisation remained bleak. The standards of industrial enterprise were "inefficient" and the growth was "slow". It remains to be explained why Government spending over the years could not quicken the pace of industrialisation in India and improve the standards of industrial enterprise.

It is not fortuitous that payments in England on account of "stores for India" did not decrease, but considerably increased towards the close of the nineteenth century. The following figures have been collected from the Accounts of the Home Treasury which reveal the growth of expenditure on stores, particularly from 1900 to 1914:

STORES FOR INDIA[1]

Year	£
1877-78	1,513,823
1878-79	1,090,289
1879-80	1,446,591
1880-81	1,754,794
1881-82	1,332,468
1882-83	1,085,986
1883-84	933,765
1884-85	1,103,770
1885-86	1,362,147
1886-87	1,077,740
1888-89	1,057,732
1889-90	895,653
1890-91	1,542,845
1891-92	1,659,486
1892-93	1,515,141
1893-94	1,312,857
1896-97	893,635
1897-98	941,971
1899-1900	894,585
1900-01	1,552,333
1901-02	1,999,968
1902-03	1,814,040
1903-04	1,842,413
1904-05	2,926,268
1905-06	2,241,342
1906-07	2,519,418
1908-09	1,308,959
1909-10	1,045,370
1910-11	992,887
1911-12	1,204,457
1912-13	...
1913-14	1,503,388

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large sums of money. It was particularly noted that Indian industrial enterprise was weakly developed (CD—Stores, June, 1914).

[1] Figures have been collected from the Accounts of the Home Treasury. Expenditure on stores includes freight.

The expenditure on Stores for State Railways (which was not charged to Revenue) increased considerably between 1902-03 and 1913-14.[1]

STORES FOR STATE RAILWAYS

Year	£
1883-84	761,543
1884-85	837,072
1885-86	1,776,592
1886-87	1,077,740
...	...
1889-90	694,776
1890-91	744,885
1896-97	1,138,268
1900-01	639,330
1901-02	843,814
1902-03	1,281,099
1903-04	1,236,500
1904-05	1,482,667[2]
1905-06	2,035,017
1906-07	2,238,858
1907-08	...
1908-09	3,308,395
1909-10	2,080,376
1910-11	1,846,287[3]
1911-12	2,124,053
1912-13	2,422,112
1913-14	2,974,364

The expenditure on stores for irrigation works (which was not charged to revenue) was much less than that on railway stores; it was from 1905-06 that expenditure on irrigation stores showed a tendency to rise. The following figures on the value of stores for irrigation works have been collected from the Accounts of the Home Treasury.[4]

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[1] Expenditure includes freight.

[2] Besides State Railways stores for Pegu-Moulmein Railways, Henzada-Kyangin Railway, Azikhal-Mangalore Railway are included in the expenditure on stores for the year 1904-1905, 1905-1906 and 1906-1907.

[3] Stores for Southern Shan Railways have been included in the expenditure on Railway Stores for the years 1910-11, 1911-12, 1912-13 and 1913-14. Stores for Sara Bridge have been included in the expenditure for the years 1910-11, 1911-12, 1912-13, 1913-14.

[4] Expenditure includes freight.

STORES FOR IRRIGATION WORKS

Year	£
1883-84	8,574
1884-85	3,756
1885-86	4,450
1886-87	2,009
...	...
1889-90	1,963
1899-1900	10,478
1900-01	7,877
1901-02	7,317
1902-03	6,679
1903-04	3,809
1904-05	7,259
1905-06	31,949
1906-07	79,369
1907-08	...
1908-09	59,866
1909-10	36,528
1910-11	61,416
1911-12	87,651
1912-13	30,518
1913-14	58,795

The objective of reducing the payments in England for stores which the Indian Government had constantly in view remained unfulfilled. They were running after the will-o-the-wisp. In a note prepared by Lord Ripon's Government an indication of the essential prerequisite for India's industrialisation and for the reduction of the payments for stores in England was given: "Some gradual progress is being made in the direction of substituting Indian made articles for those of English manufacture; but it will not be possible to make any very sensible impression upon the total amount of stores imported from England until iron work and machinery, equal in quality and not superior in price to the English articles, can be manufactured in India".[1]

In this note the problem of India has been posed in admirably lucid and objective fashion. The manufacture of "iron work and machinery" was the crux of the problem. Industrial policy should be directed to help and accelerate the large-scale manufacture of "iron work and machinery", or real industrialisation would remain a chimera, and "India's dangerous dependence on imports for the fundamental necessities of industrial life" would continue.[2]

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[1] Summary of Financial Statement by E. Baring, March 1, 1883, FD to, No. 76, March 20, 1883, B.; E. Baring (afterwards Lord Cromer) was Finance Member of Ripon's Government.

[2] Vera Anstey, *Op. Cit.*, p. 216.

CHAPTER III

COAL, PAPER AND WOOLLEN INDUSTRIES

WE will now deal with the development of the coal, paper and woollen industries and examine the part played by Government spending in their development. We have selected these industries in order to show how and to what extent the relaxation of the Stores Rules stimulated the growth of nascent industries. It seems that the relaxation of the Stores Rules enabled paper and woollen industries in particular and also some other small industries to compete with foreign competitors, sometimes successfully, in the Indian market by their reliance on Government orders "invloving settled business at fixed rates". Indian industries eagerly expected, especially in the initial years of their development, a continuity of Govrnment orders which induced them to improve the quality of their manufactures and increase production. In the case of the coal industry, there were other factors, apart from Government spending, which contributed to the growth of the industry. The coal industry attracted foreign and Indian capital, and with the extension of the railways there was generated a large and growing demand for coal.

COAL INDUSTRY

Coal mining commenced in Bengal in 1820, when a mine was opened at Raniganj. It made little progress until the East Indian Railway reached the field in 1854. In 1857 the output was 293,443 tons; in 1880 the output reached 1,019,793 tons.[1]

The relaxation of the Stores Rules, as envisaged in the Resolution of 1883, gave an impetus to the nascent industry, which, as we will presently see, made significant advance between 1895 and 1914. Government spending, although it varied from year to year, was large and continuous, as will be evident from the following figures.

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[1] Report of Geo. A. Stonier, Chief Inspector of Mines, 1901 (CD—Coal and Iron, December, 1902, Nos, 3-5, B).

EXPENDITURE ON COAL AND COKE MANUFACTURED IN INDIA[1]

Year	Rs.
1882-83	3,54,824
1883-84	15,86,047
1884-85	3,75,340
1885-86	2,88,583
1886-87	1,71,740
1887-88	2,42,154
...	...
1891-92	25,72,074
1892-93	25,33,988
1893-94	34,45,123
1894-95	34,45,814
1895-96	35,23,433
1896-97	28,03,142
1897-98	9,35,954
1898-99	5,19,948
1899-1900	27,72,178
1900-01	31,83,297
1901-02	42,07,686
1902-03	44,66,221
1903-04	48,17,108
1904-05	69,34,097
1905-06	10,94,535[2]
1906-07	12,46,907
1907-08	14,69,043
1908-09	16,35,988

There was a decline in the import of coal and coke through the Secretary of State, which amounted to 32,340 tons in 1890-91, 15,149 tons in 1900-01, 55,769 tons in 1901-02,[3] 1,219 tons in 1907, 6,198 tons in 1908 and 26,567 tons in 1909.[4] Most of the consignments went to Bombay. The Governor-General in Council proposed in 1909 the exclusion of coal from the Annual Return and noted:

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[1] Figures have been taken from the Returns submitted by the Government of India to the Secretary of State.

[2] The decrease was due to the exclusion from the Returns of the North Western Railway of the supplies obtained from local dealers. CD—Stores, 1907, Pro. Vols.

[3] Figures have been taken from the Report of Geo. A. Stonier, 1901. (*Ibid*).

[4] *Note on the production and consumption of coal in India*, (CD—Industries, December, 1910, File No. 34). The Accounts of Home Treasury give the following figures on the expenditure (including freight) on Government Stores (under the item "Coal"):

Year	£
1901-02	39,544
1902-03	18,053
1903-04	10,923

(Contd.)

"The development of the coal industry of India has in recent years been so marked that, with the exception of the special requirements of the Royal Indian Marine and the Mint, the bulk of the supplies for the use of our Government Departments can now be, and are as a matter of fact, obtained from Indian collieries. .... There can be no suggestion now of our departments importing coal, at least to any appreciable extent".[1] And coal was omitted from the Returns from 1909-10.[2]

Apart from Government spending, the growth of the coal industry was helped to a large extent by the growing demands of the railways, cotton mills, jute mills, iron and steel industry, Port Trusts, tea gardens. The following statement gives an estimate of the coal consumed in India in 1909 in different industries and the other forms of consumption. The figures can only be regarded as approximate.[3]

(Contd.)

Year	£
1904-05	9,057
1905-06	7,545
1906-07	8,523
...	...
1908-09	14,791
1909-10	23,818
1910-11	836
1911-12	4,763
1912-13	8,130
1913-14	7,014

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[1] CD-Stores, April, 1909, B.

[2] The Returns mention coke with coal. It appears that very little was done, till the close of the nineteenth century, to produce coke suitable for the blast furnace. Private coal companies produced coke of an inferior quality (FD to, No. 11, January 22, 1884). The Mint Master of Calcutta noted in 1883, "I think that experience has shown that the coal companies who complain of the intrusion of the Railways on their sphere have abundantly shown their incompetence to take up the supply" (*Ibid*). Major Mahon wrote in his Report in 1899 that the 24 coke ovens which the Barakar Iron Works put to work in 1895 ceased to work in 1898. The East Indian Railway Collieries at Giridih produced the best coke in India. "Perhaps the principal reason for the lack of endeavour to improve the coke lies in the fact that the material already made, bad as it is, finds a ready sale at a large profit". (The Report, p. 27, CD—Coal and Iron, October, 1899, B). Towards the close of the nineteenth century coke manufacturers gave "promise of improving their product", and Government departments hoped "to reduce the demands on England still further". Letter from R. H. Mahon, August 20, 1906, CD—Stores, 1907, Pro. Vols.

[3] *Note on the production and consumption of coal in India*, (CD—Industries, December, 1910, File No. 34).

	Tons
Railways (including railway workshops) ...	3,765,000
Port Trusts	109,000
Bunker Coal	989,000
Inland Steamers	500,000
Jute Mills	703,000
Cotton Mills	862,000
Iron and brass foundries	528,000
Tea gardens	100,000
Consumption at collieries and wastages	1,131,000
Other forms of industrial and domestic consumption ...	3,110,000
Total	11,797,000

The railways constituted the single biggest purchaser of coal. In 1878 the total consumption of coal was about 858,000 tons, of which foreign coal constituted nearly one-fourth. In 1888 the consumption of the railways rose to 1.64 million tons, and Indian coal represented nearly 95 per cent., "thus marking a rapid and vigorous displacement of foreign coal".[1] In 1909 the total consumption was about 3.77 million tons and Indian coal represented nearly 98 per cent.[2]

It seems that the coal-mining industry did not make much progress between 1820 and 1890; the industry began to grow rapidly between 1895 and 1909. The number of coal mines was 68 in 1887, 67 in 1888 and 72 in 1889. The industry was concentrated in Bengal where the number of coal mines was 63 in 1889; the rest were in Central India, Central Provinces, Hyderabad, Assam, Baluchistan and the Punjab.[3] The number of persons employed in the industry was 28,438 in 1887, 29,301 in 1888 and 29,953 in 1889.[4] The number of coal mines rose to 235 in 1895, but in 1896 only 172 collieries were in active operation. In 1895, 218 coal mines were at work in Bengal, in 1896 the number was 154.[5] In 1897 the number of coal mines reached 228, of which 211 were in Bengal. The number of persons employed in coal-mining industry was 34,549 in 1896 and 57,692 in 1897.[1] In 1901 the number of coal mines was 315, of which 292 were in Bengal. The number of persons employed in 1901 was 85,361.[2] In 1910 128 Joint-Stock Coal Companies were at work, of which 119 were in Bengal. The total paid up capital of the Joint-Stock Coal Companies stood at Rs. 7,31,12,842.[3] The great majority of the mines which were at work in 1910 were less than 20 years old ; there were a few mines in the Raniganj field working in 1910 which were opened before 1860. The number of persons employed in 1909 was 119,546.[4]

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[1] *Ibid.*

[2] *Ibid.*

[3] Statement relating to Collieries in India (CD—Coal and Iron, November, 1890, B). Out of 72 Coal mines working in 1889, 40 were owned by joint-stock companies.

[4] *Ibid.* The miners were recruited from the agricultural classes; of the employees in 1889, 19,171 were men, 6,987 women and 2,628 children.

[5] *Report on the coal supply of India* by Professor W. R. Dunstan, Director of the Scientific Department, Imperial Institute, 1898, (CD—Coal and Iron, July, 1903, Nos. 1-4, B). Dunstan noted in his Report that coal is widely distributed throughout India, except in Bombay and Sind, the North West Provinces and Oudh, Rajputana and Mysore; many of the coal-fields had not been fully explored, and "only a small proportion of the total known coal area" was being worked. The report gives valuable information on the conditions of labour employed in coal mines.

It will be evident from the figures quoted below that the production of coal began to rise steadily from 1895. In 1878 the output was 1,015,210 tons, in 1895 it rose to 3,540,019 tons. In 1908 the output stood at 12,769,635 tons or about 3½ times as much. The Bengal coal fields produced nearly 90 per cent of the coal raised in India.

QUANTITY OF COAL PRODUCED IN INDIA[5]

Year	*Quantity in tons*
1878	1,015,210
1888	1,708,903
1895	3,540,019
1896	3,863,698
1897	4,066,294
1898	4,608,196
1899	5,093,260
1900	6,118,692
1901	6,635,727
1902	7,424,402[6]

(Contd.)

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[1] *Report of the Inspection of Mines in India,* 1897 by J. Grundy (CD—Coal and Iron, April, 1899, Nos. 1-3, B).

[2] Report by Geo. A. Stonier, 1901. Of the coal-fields Raniganj came first with 41,196 workers ; Jheria employed 27,346, Girdih 10,711, Assam 1,210, Punjab 1,536, Central Provinces 2,220, Baluchistan 540 and Burma 203 workers. It is evident that the coal industry could offer employment to a large labour force and thus relieve the pressure on land.

[3] *Note on the Production and Consumption of Coal in India,* (CD—Industries, December, 1910, File No. 34). Some of the Coal mines were registered in England. The list of Joint-Stock Coal Companies which were at work on March 31, 1910, has been given in Appendix C.

[4] *Ibid.* The average price of coal per ton ranged from Rs. 3-6 as in 1890 to Rs. 3-8 as in 1909. The miners had economic links with the village ; migration to the village in the harvest season sometimes led to scarcity of labour.

[5] *Note on the Production and Consumption of Coal in India, (Ibid).*

[6] Including 187,703 tons converted into coke.

QUANTITY OF COAL PRODUCED IN INDIA (*Contd.*)

Year	*Quantity in tons*
1903	7,438,386[1]
1904	8,216,706[2]
1905	8,417,739
1906	9,783,250
1907	11,147,339
1908	12,769,635
1909	11,870,114

It appears that there was a fall in the output of coal in 1909, but it again reached 12,715,534 tons in 1911, 14,706,339 in 1912, 16,208,009 in 1913 and 16,464,263 tons in 1914.[3]

The import of foreign coal varied from year to year. The quantity of foreign coal imported into India was 729,058 tons in 1880, 817,004 in 1890 and 142,467 tons in 1900.[4] The figures given below representing private merchandise will show that India could not dispense with the import of foreign coal. Bombay had always been the largest importer, it being far removed by sea or land from the coal-fields.[5] England supplied by far the greatest part of the imported coal. Between 1878 and 1898 Australia held the second place and Japan the third. In 1907 Natal went ahead of Japan which lost its hold on the Indian market.[6]

It is undeniable that the coal industry had made much progress, but it was still in the initial phase of development. There was con-

IMPORT OF COAL[7]

Quinquennial average	*1,000 tons*
1901-05	205
1906-10	344
1911-15	427

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[1] Including 191,666 tons converted into coke.

[2] Including 186,454 tons converted into coke.

[3] C.W.E. Cotton, *Handbook of Commercial Information*, 1924, p. 297. The price of coal per ton at the pit's mouth was Rs. 3-8 as. in 1913.

[4] Report by Geo. A. Stonier, 1901. CD—Coal and Iron, December, 1902, B.

[5] F. R. Upcott, Government Director of Indian Railways, pointed out in 1902 that the coal industry was handicapped by "the distance of the collieries from the cities and manufacturing centres". (CD—Coal and Iron, July, 1903, No. 1-4, B).

[6] *Note on the Production and Consumption of Coal in India* (*Ibid*).

[7] The table has been taken from Vera Anstey, *Op. Cit.*, p. 519.

siderable scope for the development and extension of the industry. Much still remained to be done in exploring many of the coal-fields and in raising the level of production.[1]

It is a familiar fact that the coal industry owed its development to European enterprise; the largest and best developed mines were in the hands of Europeans. It is, however, worthy of note that Indian capital was fairly active in coal industry since its inception, although the majority of Indian enterprises consisted of small pits.[2] The Indian Mining Federation was founded in 1913, which represents Indian capital in the coal mining industry of Bengal and Bihar.[3] Indian capital was destined to play an important rôle in the coal mining industry in the years to come. It is an important point to remember in order to comprehend the growth of Indian entrepreneurship and its conflict with foreign capital.

PAPER INDUSTRY

The relaxation of the Stores Rules also helped the growth of the Indian paper industry. In 1879 the Bengal Government issued orders for the substitution of Bally Mills paper for European printing paper.[4] In 1882 the Government of India conducted enquiries with regard to the establishment of a paper mill at Bombay and announced that they would enter into contract with the mill for

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[1] Professor W. R. Dunstan wrote an interesting paper on *The Coal Resources of India and their development* in 1902, in which it was pointed out that the industry was "hardly out of its infancy"; the Indian output was about 1/35th of that of the United Kingdom and Ireland; the Geological Survey of India could render important service to the development and extension of the industry. Professor Dunstan anticipated the growth of the iron and steel industry which was "a momentous question for India". (CD—Coal and Iron, July, 1903, B). The Geological Survey Department (founded in 1851) did valuable work in the direction of collecting and disseminating information regarding the mineral resources of India.

[2] In 1897 there were 40 mines in the Burdwan Division and 62 mines in the Chota Nagpur Division which were owned and managed by Indians. See the Report of the Inspection of Mines in India, 1899. CD—Coal and Iron, April, 1899, Nos. 1-3, B. Also see the *Report of the Indian Industrial Commission* (1916-18), pp. 18-19.

[3] C.W.E. Cotton, *Op. Cit.*, p. 33. In his evidence before the Indian Industrial Commission, A. C. Banerjee, Secretary of the Indian Mining Federation, pointed out that Indian enterprises were particularly handicapped by lack of capital; banks generally did not advance "loans on the security of colliery properties;" those who subscribed to Joint-Stock Companies "expect a dividend immediately" with the result that they lost interest in the company when they did not get it (Minutes of Evidence, Vol. II, pp. 286-87, Indian Industrial Commission, 1916-18). Also see *Commerce*, March, 26, 1913.

[4] FD from, No. 94, March 13, 1879, B.

"a term of five years or more" for the supply of paper required for the public service in the country.[1] During the period of Lord Ripon's Administration purchase of Indian paper and paste board increased to an appreciable extent and the Governor-General-in-Council noted in their Financial Despatch, dated 28th April, 1884: "Looking to the development which is being taken by this industry, we hope that the consumption of locally made paper and paste board will increase year by year".[2] This expectation was partly fulfilled. By 1888 the Indian paper mills had been producing different qualities of paper and local paper was being used in all the provinces.[3] The Indian paper mills increased their production, but did not always produce good quality paper, and in 1898-99 large consignments of Indian paper had to be rejected "on account of inferiority of colour". The Bengal Mills and the Scindia Mill charged rates which were higher than those charged for English varieties of paper. The Government of India felt that "a combination of mill-owners to form monopoly and keep up prices undoubtedly existed".[4]

The Government of India set up a Committee in 1902 in order to ascertain whether "the whole of the supply" of paper should continue to be obtained from the Indian mills. It was felt that there was no "effective competition" in the tenders from the Indian mills. The findings of the Committee throw a good deal of light on the conditions of the paper mills—their financial position, the extent of their dependence on Government orders, and their problems.[5] It was noted that the Indian mills were producing different kinds of paper; the quality of the paper supplied by them had

[1] Resolution of the Government of India, Department of Finance, August 11, 1882 (CD—Accounts and Finance, August, 1882, B).

[2] FD to, No. 117, April 28, 1884, B.

[3] FD to, No. 219, August 25, 1885;
Description of locally manufactured paper: (i) Blue laid, imperial; (ii) Blue royal, imperial; (iii) Blue Demy, imperial; (iv) Blue double foolscap; (v) Blue foolscap; (vi) Cream foolscap.
The Industrial Conference held at Poona in 1891 noted with satisfaction the decrease in the import of printing paper and writing paper thanks to the policy of purchasing paper made in the Indian mills. Rao Saheb Natu observed: "What an impetus it would be to Indian manufactures if Government purchase their stores in India instead of in England". (Report of the Industrial Conference, CD—Accounts and Finance, August, 1892).

[4] FD to, No. 332, October 22, 1903.
The Bengal Mills: (i) Bally Paper Mills (Managing Agent—G. Henderson & Co.); (ii) Bengal Paper Mills (Managing Agent—Balmer Lawrie & Co.); (iii) Titaghur Paper Mills (Managing Agent—Heilgers & Co.). See *Capital*, July 5, 1900.

[5] J. E. O'conor, Director-General of Statistics, was the President of the Committee.

"steadily improved". Government was their "largest customer", and hence any change in the prevailing system "would probably ruin the mills".[1] Some of the mills would not have been started "but for the Government and Railway orders amounting to 6,000 to 7,000 tons a year".[2] The financial position of some of the mills was precarious; the Titaghur and Upper India mills only could be considered to be "in a satisfactory condition".[3] The Indian mills were handicapped by the rise in the price of raw materials, over-production, defects in management and more particularly the competition of imported printing paper made cheaply from wood pulp. The Committee recommended that "the present system should continue".[4] The Government of India accepted this recommendation.[5]

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[1] Indian mills produced different kinds of paper: White printing; Half-bleached; Coloured; White cartridge; White blotting; Manilla. The price of White printing paper was 2 as. 10 pies per lb. in 1901-02 (CD—Accounts and Finance, July, 1902, B).

[2] Separate Note by Bankier and Harris (*Ibid*).

[3] The Note of O'conor and Wheeler gave the following statement on the financial position of the Indian mills in January, 1902 :

Paid up capital	Debentures	Reserve funds	Names	Managing Agents	Profit or Loss
£ 122,200	—	—	Bally Paper Mills	G. Henderson & Co.	£ 1,488
Rs. 8,00,000	Rs. 3,50,000	2,26,669	Bengal Paper Mills	Balmer Lawrie & Co.	−Rs. 27,932
Rs. 12,00,000	Rs. 6,00,000	1,40,000	Imperial Paper Mills	Jardine Skinner	−Rs. 81,525
Rs. 10,00,000	—	3,60,000	Titaghur	Heilgers & Co.	Rs. 22,008
Rs. 8,00,000	—	4,00,000	Upper India	C. W. Edwardes	Rs. 14,707

[4] Note of O'conor and Wheeler. The Indian mills used rags, grass, straw, jute, old gunnies, ropes, waste paper as raw materials.

[5] Letter from E. N. Baker, Finance and Commerce Department, Government of India (CD—Accounts and Finance, July, 1902, B).

The following figures have been collected from the Returns which will show the expenditure on the purchase of Indian paper and paste board. It is noteworthy that there was a continuity of Government orders over the years.

EXPENDITURE ON PAPER AND PASTE BOARD

Year	Rs.
1882-83	3,66,842
1883-84	3,79,060
1884-85	4,88,528
1885-86	7,88,748
1886-87	10,71,820
1887-88	11,29,468
...	...
1891-92	20,55,736
1892-93	19,85,470
1893-94	22,14,472
1894-95	22,58,621
1895-96	24,14,011
1896-97	23,42,063
1897-98	23,89,138
1898-99	23,79,857
1899-1900	24,08,664
1900-01	28,84,636
1901-02	28,75,396
1902-03	26,98,279
1903-04	22,58,365
1904-05	7,75,242*
1905-06	27,10,349
1906-07	32,14,298
1907-08	40,86,348
1908-09	38,11,064
1909-10	38,68,713
1910-11	39,29,840
1911-12	35,94,604
1912-13	34,51,540
1913-14	36,04,126

It is undeniable that the Indian paper industry made significant advance and several big paper mills were at work; the output of the paper mills rose from 12 million pounds in 1886 to about 57 million pounds in 1909. The import of foreign paper, however, continued and India did not achieve self-sufficiency in paper, especially in writing paper and drawing paper.[1]

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* Decrease was due to "a substantial reduction in the contract price of paper" and to a falling off in the demand. CD—Stores, 1905, Pro. Vols.

[1] The catalogue of Indian Manufacturers published by the Indian Government in September, 1909 gives the following list of paper mills: (i) Serampur Paper Mills; (ii) Titaghur Paper Mills; (iii) Bengal Paper Mills; (iv) Scindia

The expenditure on paper and paste board imported through the Secretary of State and on European paper and paste board is shown in the Returns.[1] It seems that indenting officers obtained a small portion of their requirements from these sources.

Year	Stores imported through the Secretary of State Rs.	European stores imported in India Rs.
1882-83	9,73,308	1,04,192
1883-84	18,22,396	92,767
1884-85	9,69,308	32,456
1885-86	6,57,171	35,675
1886-87	6,39,559	79,803
...	...	...
1893-94	4,05,199	30,112
1894-95	2,58,914	21,290
1895-96	3,56,088	21,012
1896-97	2,31,536	18,954
1897-98	3,85,161	5,455
1898-99	2,54,471	1,771
1904-05	...	7,891
1909-10	...	33,993
1913-14	...	41,184

There is no doubt that the Indian paper mills enjoyed Government support for some considerable time, and the local mills felt that "it has been vital to their existence". In their evidence before

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Paper Mills (Gwalior); (v) Girgaon Paper Mills (Bombay); (vi) M. J. Paper Mills (Surat); (vii) Rakhal Das Paldhi Paper Mills (Lucknow); (viii) Reay Mills (Poona); (ix) Travancore Paper Mills (Travancore).
CD—Stores, 1909—(File No. 87).

PAPER MILLS

Year	Production (lbs.)	Persons employed
1885-86	12,303,327	1,118
1900-01	45,940,591	4,978
1905-06	44,146,157	4,012
1908-09	56,825,469	4,959

PPHC, 94, 1907; also See T. Morison, *The Economic Transition in India*, p. 174.

[1] Stores imported through the Secretary of State have been omitted from the Returns from 1899-1900. It is evident, however, that the amount spent on the purchase of Indian paper and paste board increased, and that on import through the Secretary of State decreased.

Import of paper from England (exclusive of Government stores) was not insignificant. The quinquennial average of the value of import of paper and paste board from United Kingdom into India (of the years 1898-99 to 1902-03) was: £ 162,000 (Minute by Sir E. F. G. Law, FD to, No. 324, October 22, 1903). Spicer Brothers, Morgan & Co., De La Rue & Co., Smith & Co., Dickinson & Co., Turner & Co., were some of the firms which supplied writing paper, drawing paper and printing paper (FD to, No. 123, April 28, 1885).

the Industrial Commission, the Bengal Paper Mills emphasised the importance of continuous Government purchase which "would be an incentive to increase the production".[1] The imports made through the Stores Department steadily declined. Government purchase was heavy during the war years, and the possibility of further expansion opened up.

THE WOOLLEN MILLS

The Indian Woollen Mills, which owed their origin mainly to European enterprise, were also the beneficiaries of the relaxation of the Stores Rules. It has already been noted that the Government of India adopted a resolution in 1881 recommending that woollen goods of Indian manufacture could be substituted for European goods.[2] The Government of India purchased woollen goods for the use of the army and the police, and this accounted for considerable expenditure.

The Returns indicate that Government purchase of Indian woollen goods was continuous and represented an important item of expenditure on the purchase of Indian manufactures.

EXPENDITURE ON INDIAN WOOLLEN GOODS

Year	Rs.
1882-83	82,850
1883-84	1,01,854
1884-85	2,19,763
1885-86	2,92,677
1886-87	3,12,821
1887-88	3,50,595
...	...
1891-92	6,96,632
1892-93	5,74,625
1893-94	6,06,696
1894-95	5,87,210
1895-96	6,17,817
1896-97	5,44,779
1897-98	9,00,379

(Contd.)

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[1] Minutes of Evidence, *Report of the Indian Industrial Commission* (1916-18), Vol. II, pp. 140-41. The output of this paper mill (registered in 1889) was estimated at 6,600 tons per annum; it employed 1,200 workers.

[2] CD—Accounts and Finance, Pro. Vols., October, 1881. The Cawnpore Woollen Mills, the Egerton Mills and the Bangalore Woollen Mills were mentioned as the possible sources of supply.

EXPENDITURE ON INDIAN WOOLLEN GOODS (*Contd.*)

Year	Rs.
1898-99	3,60,316
1899-1900	5,23,669
1900-01	12,28,619
1901-02	9,63,836
1902-03	5,01,465
1903-04	5,08,162
1904-05	5,97,771
1905-06	7,92,716
1906-07	4,69,549
1907-08	4,39,687
1908-09	6,77,250
1909-10	4,12,099
1910-11	4,29,810
1911-12	5,31,764
1912-13	7,31,836
1913-14	14,13,195

In 1909 there were nine Woollen Mills, of which the Cawnpore Woollen Mills and the New Egerton Woollen Mills (Dhariwal) were the biggest; the output of the Woollen Mills reached nearly 4 million pounds.[1] The mills in the United Provinces and the Punjab imported considerable quantities of wool from Australia and the Cape; there were large imports of raw wool from Persia and Afghanistan.[2] The evidence which the Indian mills gave before the Stores Committee

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[1] The Catalogue of Indian manufactures (CD—Stores, File No. 87, September, 1909), gives the following list of Woollen Mills: (i) The New Egerton Woollen Mills; (ii) Duxbury Woollen Mills (Bombay); (iii) Sorab Mills (Bombay); (iv) Swadeshi Weaving Co. (Amritsar); (v) Bangalore Woollen Mills; (vi) Bombay Woollen Manufacturing Co.; (vii) Kevaldas Trivandas Woollen Mills (Ahmedabad); (viii) Nadiad Silk and Woollen Co. (Nadiad); (ix) The Cawnpore Woollen Mills.

WOOLLEN MILLS

Year	Production (lbs.)	Persons employed
1885-86	1,002,512	1,209
1900-01	3,406,962	2,984
1905-06	4,126,937	3,491
1908	3,415,763	3,511

PPHC, 94,1907; T. Morison, *Op. Cit.*, p. 174.

[2] C.W.E. Cotton, *Op. Cit.*, p. 228.

It seems that the supply of raw wool was a major problem which stood in the way of the expansion of the woollen industry (See *Notes on the Industrial condition and possibilities of the UP* by A. C. Chatterjee CI—Industries, File No. 20, September, 1907).

of 1906 indicates that Government contracts were of much help to them in the initial years of their development. In 1885 Government purchase formed 86.88 per cent of the total sales of the Cawnpore Mills. From 1895, however, Government orders began to decrease and the Cawnpore Mills had to depend more and more on private demand. The following figures will show that Government purchase decreased considerably between 1895 and 1905[1]:

Year	Government purchase in relation to total sales
1885	86.88 per cent.
1890	41.63 " "
1895	30.54 " "
1900	29.04 " "
1905	7.86 " "

The Cawnpore Woollen Mills had, however, made much progress, despite the fact that they did not enjoy "the assistance of protection". They started their business in 1876; their capital investment had grown from 2 lakhs of rupees to nearly 18 lakhs in 1906. They employed about 2,000 workers. They had "a plant capable of dealing with 15,000 lbs. of raw wool daily".[2]

From the evidence of the New Egerton Woollen Mills before the Stores Committee it appears that they also depended on Government contracts in the early years. They stated that the Company was formed "with the express intention of meeting the demands of Government". They complained that their sales to the Supply and Transport Corps, Lahore, had fallen from a value of Rs. 2,94,000 in 1896 to Rs. 60,000 in 1905.[3]

The Returns show that the value of woollen goods imported through the Secretary of State did not decrease; on the contrary it remained a considerable item of expenditure. The expenditure on European woollen goods considerably decreased between 1904-05 and 1913-14.

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[1] *Report of the Stores Committee* (1906), Vol. II (ILD, Stores, Confidential, 1906).

[2] *Ibid.* The mills manufactured blankets, great coat cloths, serges, flannels, woollen and worsted materials, rugs.

[3] *Ibid.* They stated that their usual reserves of raw wool amounted to 1,000,000 lbs.

Year	Stores imported through the Secretary of State[1] Rs.	European stores imported in India Rs.
1882-83	7,28,278	1,02,276
1883-84	16,77,080	60,828
1884-85	7,76,107	1,51,768
1885-86	8,20,219	2,35,315
1886-87	15,43,137	1,49,554
1887-88	11,73,833	27,733
...	...	...
1891-92	10,93,573	36,813
1892-93	10,03,450	20,676
1893-94	12,44,329	19,445
1894-95	9,63,312	11,531
1895-96	9,89,065	6,597
1896-97	10,12,431	23,000
1897-98	8,48,829	3,926
1898-99	8,47,172[2]	1,211
1901-02	...	5,54,326
1906-07	...	15,391
1913-14	...	7,897

It seems that the Army and Military Supply Departments could have given greater support to the Indian woollen mills who were in a position to undertake more work than that with which they were entrusted.[3] We have seen that Government purchases from the Cawnpore Mills and the Egerton Mills considerably decreased in 1905, although the capabilities of the Mills were sufficiently known. The War came to their rescue; there was a big demand for woollen manufactures, enhanced by the exceptional requirements of the Government, and some of the Indian woollen mills were employed to their fullest capacity in supplying Government orders.[4]

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[1] Stores imported through the Secretary of State have been omitted from the Returns from 1899-1900.

[2] See the *Report of the Stores Committee* (1906), p. 29.

[3] The Committee reviewed the indents despatched by the Army Clothing Department in the year 1904-05 ; the aggregate value of the indents was £ 148,756, of which £ 56,140 represented the value of articles which could have been obtained in India. The requirements of this department consisted of woollen goods, cotton cloths, drills, etc. *Ibid*, pp. 23-24.

[4] S.W.E. Cotton, *Op. Cit.*, p. 230.

CHAPTER IV

IRON AND STEEL INDUSTRY

THE indigenous iron-smelting industry, which was at one time a widespread industry, had been practically destroyed by competition with British iron, and the iron industry that existed was in a moribund condition.[1] India became, during the second half of the nineteenth century, a large and growing market for the products of British iron and steel industry. Iron and steel were imported through the Stores Department of the India Office for the use of the consuming departments. Apart from Government departments, the mercantile houses also imported iron and steel which found a ready sale in the country. In 1863 the duty on imported iron was reduced from 10 to 1 per cent. Machinery was on the free list.[2] The Suez Canal was opened in 1869, and this "great work" was destined "to accelerate the conveyance of stores" between England and India.[3] It seems that the possibility of establishing iron industry in India, which has rich iron deposits and a large supply of coal, could not fail to attract attention of the Government and of private enterprise when railways were being built and a vast market for iron and steel opened up. Some bold attempts were made to develop the iron industry in Porto Novo by some enterprising Europeans even before the advent of the railways, and it will be worthwhile to know why their endeavours ended in failure. We will then examine the part played by Government spending in the development of the iron and steel industry which was of crucial importance for India's industrialisation.

The history of the Porto Novo Iron Works, the earliest of its kind in India, may be briefly told.[4] This Iron Works owed its origin to the enterprise of Josia Marshall Heath, an official of the Madras

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[1] D. H. Buchanan, *Op. Cit.*, p. 274. This author states that in India steel was used for weapons, for decorative purposes and for tools. The famous Iron Column near Kutb Minar at Delhi weighs over 6 tons ; remains of old smelting furnaces "are found throughout the country".

[2] FD to, No. 62, May 22, 1863-B.

[3] FD to, No. 189, May 31, 1870-B.

[4] For a full account of the Iron Works see R. H. Mahon, *Report upon the manufacture of Iron and Steel in India,* Appendix No. 2 (CD—Coal and Iron, October, 1899-B).

Civil Service. As early as 1824 the idea of the manufacture of iron and steel in the south of India occurred to him and under the advice of Sir Thomas Munro a grant was made to him. By the end of 1830 Heath had erected the iron works. At this stage he had exhausted the funds at his disposal. All attempts to raise capital in India failed and he made application to the Government for advance of money. The total sum advanced by the Madras Government amounted in the long run to Rs. 5,71,000. The Government retained the title deeds and "provided for the repayment of the monies plus 5 per cent interest.[1] The concern could not tide over the difficulties and maintained a precarious existence for several years, no profit being made and the Government receiving no interest.

In 1847 negotiations for the formation of a new company began and continued till 1850. The India Board was reluctant to "recommend the concession for 30 years, of the larger monopoly claimed by the Iron Company". The Court of Directors, however, took a different view and made the following significant observations: "The Court cannot lose sight of the fact that British capital has never gone out to India, except for private commercial objects, and does not appear likely to go out without decided encouragement, and they entertain a strong opinion that, while the experience of an expenditure so large without pecuniary advantage to the parties is calculated to throw a damp upon similar enterprises, the establishment of the new Company on a firm basis in the south of India may become the means of introducing a new spirit of enterprise of a similar character into other parts of India".[2] The India Board modified their opinion and "concessions equal to those already in force" were granted to the new Company.

In 1853 the East Indian Iron Company was formed with a capital of £400,000; it took over the iron works and paid to the Government £10,000 in liquidation of all claims against the old Company. The royalties were fixed at 2 sh. per ton of pig iron, and this amount was "equal to the highest average royalty now paid by British iron masters to the owners of minerals in this country".[3] The New Company formed four centres of manufacture, probably with the object of reducing the difficulties of getting an adequate supply of charcoal fuel. The amount of capital (£ 400,000) was found to be insufficient to equip four separate centres, and the difficulty in procuring fuel could not be overcome. The Palampatti works were closed in 1858, the Porto Novo and Beypore works in 1866, and in 1874 the Company finally dissolved.

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[1] *Ibid.*

[2] *Ibid.* The Court anticipated the investment of British capital in India's manufacturing industries.

[3] *Ibid.*

Thus for a period of over thirty years attempts were made to establish an iron industry in Porto Novo. There is no doubt that a large quantity of iron was actually manufactured. The works did not fail because of any lack of iron ore of good quality. According to Mahon, Heath's attempts failed due to lack of experience and of capital which was spent on machinery.[1] In the case of the East Indian Iron Company it was probably wrong to divide the available resources ("a capital of £ 400,000 was insufficient to equip four separate centres"). There was also the insuperable difficulty in procuring charcoal fuel.[2] Besides large-scale manufacture of iron cannot become an economic proposition until coal is used for smelting purposes; it presupposes that the technical problem of smelting with coal has to be solved if a continuous and sufficient supply of fuel is to be assured.

Attempts were also being made to establish an iron industry in Bengal, and here also private European enterprise showed the way.[3] In 1872 the Government of India secured the service of Bauerman, a specialist, and deputed him to visit India. His report was received in 1873, and the Government of India adopted a resolution pointing out the importance of establishing an iron industry in view of the proposed extension of the railways. In 1874 Messrs. Rutherford and Co. formed the Bengal Iron Works Company with a capital of £ 100,000.[4] The Company erected blast furnaces and foundry at Barakar. The Company broached the question of Government assistance to the industry. The Government of India decline to pledge themselves to make purchases from the Company "of the whole or any fixed proportion of their requirements of cast or wrought iron manufacture".[1] In September, 1876 the Railway Branch placed the first order with the Company for the supply of only 5,500 tons of iron for three years.[2] In 1877 the Company requested the Government "to guarantee 5 per cent on capital", so that they could raise fresh capital in order to equip the works with up-to-date plant. The Government did not accede to this request.[3] In September, 1878, Ashley Eden, the Lieutenant-Governor of Bengal, with full support of the Public Works Department, represented to the Government of India the importance of supporting the local industry and recommend "a guarantee on capital of 32 lakhs". The Government of India deputed Mr. Ness, a Mining Engineer, to report on the position and prospects of the iron works. The report of Mr. Ness was favourable; the Mining Engineer had "no doubt whatever" with regard to the capabilities of the iron works of turning out cast iron of good quality at remunerative rates.[4] In 1879 the Company made a fresh appeal to the Government and proposed that the Government "should guarantee 5 per cent on the undertaking to the extent of 12 lakhs expended", or they "should receive the property on mortgage at 4 per cent advancing 8 lakhs". The Bengal Government strongly supported the proposal; Ashley Eden feelingly wrote about the 3,000 workers who would be thrown out of employment if the Company suspended operations.[5] Lytton's Government remained consistent in their opposition to offering the iron works any tangible help and averred that "in no case could the Government of India give a guarantee of interest on capital on any such undertaking", nor would they purchase the works.[6] The Company suspended operations in April, 1879. Lord Lytton was succeeded by Lord Ripon in June, 1880, and his Government purchased the Barakar works in 1881.[7]

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[1] *Ibid*, Heath wrote, "Part of the machinery sent from England was found to be useless".

[2] *Ibid.*

[3] In 1855 the Birbhum Iron Works Company commenced operations, but the concern failed. In 1875 Messrs. Burn & Co. started operations there, but abandoned the project after a few months; see G. L. Molesworth, *Note on Iron Manufacture*. Molesworth was the Consulting Engineer for State railways. CD—Coal and Iron, September, 1882-B.

[4] Molesworth, *Ibid.* He pointed out that the iron industry should be "on a sufficiently large scale", and the output should be large in order to distribute the heavy expenditure for labour and supervision over a large output.

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[1] CD—Coal and Iron, March, 1901-B.

[2] *Ibid.*

[3] *Ibid.*

[4] *Note on the Bengal Iron Works* by T. C. Hope, Secretary to the Government of India, Department of Finance (CD—Accounts and Finance, April, 1882-B).

[5] Eden pleaded that the Government "being so large a consumer" should purchase the concern and work it itself (*Ibid*).

[6] *Ibid.*

[7] See Chapter VI. Ripon's Government remained firm in their decision to purchase the Works and the Secretary of State had to yield. Ripon assumed office on June 8, 1880; the Home Government ignored Lytton's

Lord Ripon's Government adopted a resolution in the Finance and Commerce Department on August 4, 1882, which indicates the beginning of a shift in Government's policy. In this resolution the Government did not promise assistance in general terms, but some tangible concessions were proposed to the iron industry. The Government of India declared that they would part with the Bengal Iron Works to any Company which had "sufficient capital, skill and resources" and proposed "to take annually for 10 years at fixed prices not less than certain weight of the Company's manufactures".[1] The stress which Lord Ripon's Government wanted to lay on the importance of establishing the iron industry in India, is expressed in the first three paragraphs of this important Resolution. We reproduce these paragraphs :

"The Government of India have, for some time past, had under special consideration the importance of developing the iron industry in India. The advantages which such development would afford both to State and the public,—by cheapening the cost of railway construction and maintenance, and of works for improving the water-supply; by substituting metal for more perishable materials in buildings; by reducing the home charges and their concomitant loss by exchange; by creating for the population non-agricultural employment; and by increasing the means for profitable investment of capital,—are too well known to require lengthened exposition".

"In Assam, Kuch Behar, Burma and the Kumaon ranges the prospects are promising to a greater or less extent. In lower Bengal the Raniganj district, Sonthalia and Chota Nagpur; in the Central Provinces, Sambalpur and Chanda; in Central India, the ranges near Gwalior; and in the Punjab, numerous localities are found to be especially endowed with all the requisites for successful production".

"Under the circumstances above described, it may be accepted as proved that India possesses the means of supplying all her wants in respect of cast iron, wrought iron and steel, and that such supply could be produced remuneratively on a strictly commercial basis".[2]

Lord Ripon's Government emphasised with remarkable clarity the necessity of developing the iron industry in India. In fact the

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protest that he was being relieved with "undue haste". Under the Liberal Government Hartington became the Secretary of State. See S. Gopal, *The Viceroylaty of Lord Ripon*, p. 4.

[1] CD—Coal and Iron, September, 1882-B.

[2] *Ibid.*

increase in the proportion of the population dependent on agriculture had become alarming. Agriculture was becoming more and more a losing battle. The Famine Commission of 1880 recommended "the introduction of a diversity of occupations, through which the surplus population may be drawn from agricultural pursuits and to find the means of subsistence in manufactures or some such employments".[1] The establishment of a large-scale iron industry could create new avenues of employment, reduce the Home Charges and cheapen the cost of railway construction. There was a large and daily increasing demand for iron in the country for the railways, for water-works, for buildings and bridges. India with her rich iron deposits had the means of supplying her wants in respect of cast iron, wrought iron and steel. However, years passed before this possibility could become a reality.

The resolution of Lord Ripon's Government was not favourably received in England. The "Home Manufacturers" demurred. The *Economist* carried a campaign attacking the policy of Lord Ripon's Government, which appeared to them to be "a policy of protection to native industries".[2] The Secretary of State, in his Despatch, dated the 16th November, 1882, refused to sanction the proposals of Ripon's Government. He averred that Indian manufacturers of iron "must be supported by their own strength, and not relieved by artificial means from the natural competition of other countries"; the Government would not give any preference to Indian manufacturers when entering into contracts for iron materials.[3] It is clear that Hartington wanted Ripon to adhere to the *laissez-faire* policy.

It appears that the "Home Manufacturers" had won the day; they could not afford to lose the Indian market.[4] It is noteworthy that in 1882 all import duties were abolished, except on salt and liquor, to appease Lancashire who viewed with alarm the growth of Indian cotton mills in Bombay.[1] Lord Ripon's Government noted the fact that the abolition of the import duties "has been regarded by a considerable section of Indian community as having been dictated in the interests of England".[2] This "fiscal reform" meant a sacrifice of revenue amounting to £ 1,219,000.[3]

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[1] *Report of the Famine Commission,* 1880, Part II, Chapter VI.

[2] The *Economist* wrote on November 18, 1882 : "But if higher prices are to be paid for native than for imported products simply because they are native, this difference in price is neither more nor less than a state subsidy to the home products".
Again on December 2, 1882 : "But the utmost care is necessary to prevent their commendable zeal for the extension of Indian manufactures developing into a policy of protection to native industries, which could not fail to be injurious, both to India and this country". (CD—Coal and Iron, February, 1883-B).

[3] CD—Coal and Iron, February, 1883-B.

[4] The position of British iron and steel industry may be noted in passing. In the decade 1870-80 Britain led the world in the production of pig iron and wrought iron. British manufacturers produced half of the world's pig iron and over one-third of the wrought iron, and their exports were over three-quarters of the world's export trade. The Bessemer process of steel making was invented in 1856, and the first Siemens open hearth furnace

Lord Ripon's Government had an unenviable job to do. In a strongly worded Despatch, dated 23rd January, 1883, the Governor-General-in-Council defended the policy of the Government. They quoted extracts from the Report of the Famine Commission (1880) which recommended that "the Government might usefully aid in fostering the inception of new industries". They maintained that they "rejected the idea of protecting Indian industries" and had totally abolished the import duties, so that the Indian Customs Tariff had been remodelled on the basis of "free-trade principles". The Despatch concludes with these caustic words : "It is, we presume, certain that the establishment of the iron and steel industry would be viewed with disfavour by the persons interested in the manufacture of these articles in England. In this connection it is by no means improbable that even the most legitimate efforts to develop and encourage local industry will be represented by those interested in the matter as though such efforts involved the adoption of a protective policy on the part of the Government of India".[4]

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was constructed in 1867 and the "steel age" was ushered in ; Sheffield emerged as the centre of the steel industry. From 1870 to 1886 Britain was the most important producer of steel in the world. Between 1870 and 1880 steel was substituted for iron for rails (Burnham and Hoskins, *Iron and Steel in Britain*, 1870-1930, pp. 32-35 ; Fay, *Great Britain from Adam Smith to the Present day*, p. 273).

[1] In his Financial Despatch, No. 364, dated 15th July, 1875, Lord Salisbury emphasised the importance of the gradual withdrawal of the duties levied upon cotton goods "with a view of placing the industry on a solid foundation, and also of removing a growing cause of conflict between the manufacturing interests of England and of India, which may before long become a political difference" (FD from, No. 364, July 15, 1875-B). On July 11, 1877, the House of Commons passed a Resolution declaring that the cotton import duties were "protective in their nature" and hence should be repealed. On March 18, 1878, the Government of India exempted from duty certain classes of manufactures. On April 4, 1878, the House of Commons passed a Resolution demanding that the Indian Import duty on cotton goods should be abolished. (FD from, No. 261, July 17, 1879-B). In 1879 import duties on coarser cotton goods were removed.

[2] FD to, No. 26, 23rd January, 1883-B.

[3] FD to, No. 641, April 28, 1884, Pro. Vols.

[4] CD—Coal and Iron, February, 1883-B.

What was obvious to Lord Ripon's Government was less obvious to the Secretary of State. In his Despatch, dated the 7th June, 1883, he maintained that he would have "preferred that your Government should keep itself free from engagements to any Company" and sanctioned the proposals with the significant provisions that "no actual quantity is to be specified in the contract", and that the price was to be fixed from time to time.[1] Thus the proposals of Lord Ripon's Government were virtually negatived.

Lord Ripon left India in 1884. It is not fortuitous that Ripon is remembered as a friend of India whose journey from Simla to Bombay "was a triumphal march such as India has never witnessed".[2] Lord Ripon's Government repealed the Vernacular Press Act of 1878 and introduced local self-government in districts and in municipal towns. It seems that some of the economic measures of Ripon's Government are sometimes forgotton. It was during Ripon's Administration that the Resolution of 1883 relaxing the Stores Rules was adopted. His Government emphasised the importance of establishing the iron industry in India which could restore the drifting economy of the country. His Government boldly defended the policy of giving some tangible concessions to the iron industry in India in the face of vehement opposition of the "Home Manufacturers".

The history of the Barakar Iron Works which was worked by the Government as a state enterprise from 1882 to 1889 will be told in its proper place.[3] It may be noted in passing that the Iron Works was placed under the charge of Ritter Von Schwarz, a German metallurgist ; it was a going concern which manufactured pig iron and castings and executed orders for the collieries of Barakar and Raniganj. In 1889 the Secretary of State made over the property of the Barakar Iron Works to the Bengal Iron and Steel Company, whose history we will now take up.[4]

The Bengal Iron and Steel Company was incorporated in England ; it had a capital of £ 150,000 divided into 150,000 shares of £ 1 each. It acquired the lease of the property of the Barakar Iron Works for a term of 999 years at a nominal rent of one anna per bigha, and a royalty of 5½ annas per ton on all coal sold. The property contained about 1,500 acres of land, with large deposits of iron ore and coal, two blast furnaces and a foundry. The price paid to the Secretary of State amounted to about £ 31,500 (Rs. 4,50,000). In the prospectus issued by the Company it was proposed to reconstruct the blast furnaces and increase the output from 7,000 tons to 20,000 tons of pig iron per annum.[1]

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[1] CD—Coal and Iron, July, 1883 (B). From December 1882 Kimberley, Ripon's "great friend", had become the Secretary of State.

[2] S. Gopal, *Op. Cit.*, pp. 314-15.

[3] See Chapter VI.

[4] CD—Coal and Iron, November, 1889.

Within a few years the Company had to face the problems usually associated with the large-scale manufacture of iron in a country like India. By 1894 the Company had expended the original capital of £ 150,000 and needed more capital to complete the works in hand, particularly for the erection of coke ovens; the Company thought that it would be useful to make their own coke from their own coal.[2] After paying dividends for two years the Company failed to make any profit during 1894 and 1895.[3] In their letter dated 8th June, 1894, the Company requested the Government of India for a loan of Rs. 2,00,000 at 4 per cent. The Government of Bengal wrote to the Government of India that the loan could safely be made. The Government of India could not accede to the request, but instructed the Director-General of Railways on July 9, 1895, to obtain a portion of the requirements of the State Railways from the Company.[4] In 1896 royalty on coal sold was reduced from 6 as. to 2 as. per ton. In their letter, dated 22nd May, 1896, the Chairman of the Company while expressing gratitude for this reduction of royalty on coal, requested the Government of India to "grant an advance of 13½ lakhs of rupees at 3¼ per cent". The Government of India found it impossible to consider the application.[5]

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[1] The Board of Directors consisted of George M. Blair of Messrs. P. and W. Maclellan, Chetha Iron Works, Glasgow; Colonel A. J. Filgate, Late AG, Public Works Department, India; Thomas C. Glover of Messrs. Glover & Co., Contractors, India; William Mackinnon, Glasgow; Robert Miller, Managing Director, Bengal Nagpur Railway Co.; Ritter Von Schwarz was appointed General Manager (See the *Prospectus and Memorandum and Articles of Association* of the Co., CD—Coal and Iron, November, 1889-B.) The *BISCO* undertook the manufacture of a wide range of castings—socket pipes, water pipes, drainage pipes, sleeper plates, bridge material, road roller, miscellaneous castings. (See letter from Messrs. Hoare, Miller and Co., December 11, 1890. CD—Accounts and Finance, January, 1891-B.

[2] CD—Coal and Iron, August, 1895-B.

[3] *Ibid*, March, 1897-B.

[4] *Ibid*, August, 1895-B.

[5] *Ibid*, January, 1897 (B). The Chairman of BISCO particularly mentioned the fact that the Company was indebted as under debentures £ 28,600, loans £ 13,000 and overdraft £ 16,000.

At this stage quite an interesting discussion was initiated by the Government of India which throws light on the prospects and problems of the iron and steel industry in India and on the trend of official policy.

Jeremiah Head in his Report, dated 2nd May, 1896, reviewed the history of the unsuccessful attempts at iron-manufacture at Porto Novo and particularly referred to the difficulty of "obtaining a continuous and sufficient supply of fuel". Head deprecated the idea that the Government should exert pressure on their spending departments to use only Indian iron : "It will be equivalent to taxing the people". Dr. George Watt, Reporter on Economic Products to the Government of India, in his Report, dated 11th September, 1896, pleaded for the adoption of a policy which would "place the local industry on a permanent footing". He observed: "There would be no difficulty in mentioning many industries now in a flourishing position that in their early stages of existence were confronted with an even more formidable array of inimical figures than Mr. Head has opposed to Iron". He attributed the cause of past failures of the iron industry to the absence of "a trained and experienced ironmaster". Watt also pointed out the new danger represented by cheap continental iron and steel which could be "landed in India cheaper than the corresponding articles from the United Kingdom". J. E. O'conor, the Director-General of Statistics, in his Memorandum posed new problems. He averred that the Indian iron industry should not limit itself to the production of pig iron and cast iron. The demand of pig iron was limited, being confined to the Municipalities of cities like Bombay, Calcutta, Madras, Rangoon and Karachi, which needed pig iron for pipes, drainage and water-works. The growing demand in India was for "wrought iron, merchant iron, steel, in all their various forms, from bars and plates to rails". There was also a large and growing demand for rails. But "such operations cannot be undertaken except by persons possessed of very large capital". He proposed that the Company should undertake the production of wrought iron and steel and that the Government should buy from them for a number of years "a certain quantity of their products".[1]

It appears that the Government of India modified their policy in 1896 and offered the Company a contract "for the supply of 10,000 tons of pig iron and castings annually for 10 years at rates 5 per cent lower than similar materials could be obtained from time to time from England".[1] In their Despatch, dated 20th January, 1897, the Governor-General-in-Council further explained their proposals: "The rate of 5 per cent below English rates was fixed because we considered that whilst benefiting the railways concerned, it would leave a fair margin of profit to the Barakar Company who were anxious to serve an order which would keep them steadily employed".[2]

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[1] *Ibid*, March, 1897 (B).

This concession apparently stood the Company in good stead. A new plant was installed and production also increased. In 1901 the annual production of pig iron rose to 25,000 tons, of which 10,000 tons in "castings and pig" were supplied to the State Railways. Cast-iron water-supply pipes, columns and fine castings were also manufactured and supplied to municipal and other public bodies. The Calcutta foundries were their customers in pig iron ; it was also shipped to Rangoon, Madras, Colombo, Hong Kong, Shanghai, Sydney and Melbourne.[3] Lord George Hamilton in his Despatch, dated the 15th March, 1901 referred to the encouraging success of the iron works and hoped that "the further enterprise of the Company may likewise prove fruitful".[4]

The beginnings of large-scale manufacture of iron had at last been laid ; and though production was at a low level, the very existence of a large-scale iron works could open new vistas of industrial development. Pig iron production is the basis of the iron and steel industry ; and the manufacture of steel in India could not be indefinitely postponed.

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[1] Telegram from the Government of India to BISCO, dated 15th September, 1896 (CD—Coal and Iron, January, 1897-B).

[2] CD—Coal and Iron, January, 1897.
It is difficult to follow the rationale of the argument. It has been suggested (logically, it seems) in an official note that this was done "to disarm the home manufacturers' opposition" and this had the effect of putting "an unfair burden" on the Indian manufacturer" See F. R. Upcott's note, CD—Coal and Iron, September, 1901—B. F. R. Upcott was the Government Director of Indian railways.

[3] Letter from Managing Agents, BISCO (CD—Coal and Iron, September, 1901 No. 3-B).
In 1892 Martin and Co. was appointed Managing Agents of BISCO. See the following brochures recently published by Martin-Burn & Co. : *The Martin-Burn Story* ; *The Indian Iron and Steel Co., Ltd.* ; *Martin, Burn Ltd.*

[4] Desp. of the Secretary of State, March 15, 1901, CD—Coal and Iron, September, 1901, No. 5-B.

Before we take up the history of steel manufacture in India, it is necessary to refer to the Revised Rules for mining and prospecting which were issued in 1899, the first year of Lord Curzon's Administration. According to Mr. Harris the old mining and prospecting regulations "seemed carefully devised to obstruct and prevent development".[1] One ridiculous rule was that no prospecting licence could be granted to a Company or a Syndicate. The transfer or assignment of a prospecting licence or mining lease by the licensee or lessee to another person without the previous sanction of the Local Government or to a Company, without the previous sanction of the Governor-General-in-Council, was prohibited.[2] When any area had been explored and its value as a field for mining was sufficiently ascertained, Provincial Governments could refuse to grant prospecting licences, and "put up the whole of the mining rights for sale by auction".[3] The Government of India in their Resolution, dated 20th May, 1899, issued Revised Rules under which prospecting licences could be granted to Syndicates and Companies and to a single person. The licensee could transfer or assign to another person, Syndicate or Company, with the consent of the Local Government, his rights and interests. The lease period was not to exceed thirty years. Royalty was to be 1 anna per ton for coal and ½ anna per ton for iron.[4] Thus the investigators were at least released "from the antiquated chains in which they were bound".[5]

During Lord Curzon's Government the possibility of large-scale manufacture of steel in India became the subject of discussion, and it began to figure prominently in the policy declarations of the Indian Government. It was a new development of the industrial policy, the full effects of which were to become evident as time went on.

Major Mahon broached the subject in a comprehensive report in 1899.[6] There was a revival of the English iron trade since 1898.

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[1] F. R. Harris, *Life of J. N. Tata*, p. 162.

[2] Mining Rules of 1894 (CD—Coal and Iron, June, 1899-B).

[3] Harris, *Op. Cit.*, p. 163.

[4] Resolution of the Government of India, May 20, 1899 (CD—Coal and Iron, June, 1899-B). In the case of mining lease also transfer was allowed with the sanction of the local Government.

[5] Harris, *Op. Cit.*, p. 162.

[6] Major R. H. Mahon, R.A., Deputy Director-General of Ordnance, wrote a comprehensive report on the *Manufacture of Iron and Steel in India and on the coking qualities of Indian coal.* Mahon worked as the Superintendent of Cossipore Ordnance Factory where production of steel was successfully undertaken. His great work was the result of "experience

England had recovered from the Great Depression which started in 1873 and continued into the middle '90's. An extensive railway programme was in course of execution in India. Large exports of steel rails and railway materials from America to the East had taken place in the recent period. In 1898 Japan imported 43,000 tons of rails from America, and 19,000 tons went principally to India. In this background, Mahon hoped, the establishment of a large-scale iron and steel industry in India would be an economic proposition. Mahon carried on experiments on samples of coal taken from several seams in India and found that Giridih coal and Jharia coal could produce excellent coke, suitable for the blast furnace. He particularly referred to the iron deposits in the Chanda district which "in point of richness and extent surpass any yet referred to". He found iron ores of the Salem district "of very good quality"; the Salem deposits "are practically inexhaustible in amount". He further noted that "the mechanical operations connected with the manufacture of steel, from the casting of pig iron to the rolling of finished steel bars" were already carried on in India on a small scale ; and native labour could be trained "to an outturn on any scale". Indian iron and steel industry would have to compete with countries "where outturn is measured in millions of tons". Mahon strongly felt that large-scale manufacture was an essential condition for the success of the steel works: "To be successful, the works would have to be planned on a scale equal to an outturn of between 300,000 and 400,000 tons annually, ... and equipped with plant thoroughly modern in every detail, while it would be essential for the management to consist of persons combining expert knowledge with local experience".[1]

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gained in actual manufacture in the country". (CD—Coal and Iron, October, 1899-B). Major Mahon was recognised as "the first expert" in India on the manufacture of iron and steel. Mahon also wrote a valuable report on the Chanda iron deposits. For the report see CD—Coal and Iron, September, 1902, Nos. 2-3,-B. Mr. Harris states that Tata read Mahon's report on iron and steel in 1902. Harris, *Op. Cit.*, p. 153.

[1] Mahon, *Manufacture of Iron and Steel in India*, pp. 13, 16, 25, 39 CD—Coal and Iron, October, 1899.
The imports of iron in India in 1897-98 were 197,268 tons and of steel 92,435 tons. One-third of the iron and half of the total quantity of steel was imported from countries *other* than the United Kingdom. The average value of iron per ton was Rs. 135 and of steel Rs. 126. In addition to this, railway plant (locomotives and rolling-stock, rails and fishplates, iron and steel sleepers) to the value of 20 millions of rupees was imported. (Mahon, *Op. Cit.*, p. 32). He suggested that the neighbourhood of Calcutta could be "the most suitable site" for a modern steel works. (Mahon, *Op. Cit.*, p. 39).

The Secretary of State in his despatch, dated 9th November, 1899, recorded his appreciation of Mahon's report ("a good and useful piece of work, highly creditable to Major Mahon") and noted: "if in course of time India could produce at home all, or a large part of, the iron and steels he requires, it would be a great advantage to the country and her railways". He wanted to know if any steps should be taken to promote the establishment of large iron works.[1] In similar vein Lord Curzon's Government in their Despatch, dated 24th July, 1902, pointed out "the great importance of developing Indian industries in general and the iron and steel industries in particular" and expressed their willingness to assist "any *bona fide* endeavour in that direction".[2] Again at the meeting of the Viceregal Council on 26th March, 1903, the Governor-General reiterated the desire of the Government "to see a large development of steel and iron-making industries".[3]

It appears that there awakened a new-found sense of the economic importance of iron and steel industry: the emphasis in the declarations of the Indian Government on the importance of developing iron and steel industry was new. It may be recalled that the Famine Commission (1880) recommended the fostering of light industries only: the manufacture and refining of sugar; the tanning of hides; the manufacture of cotton, wool, silk, pottery, glass, soap, oils and candles; the preparation of fibres of other sorts and of tobacco. Lord Ripon's Government anticipated the importance of iron industry in 1882, but their recommendations were negatived by the Secretary of State. The new shift of attention to iron and steel industry came in a period when foreign competition and especially the competition of "cheap continental iron and steel" began to be increasingly felt in the Indian market. It is noteworthy that Germany and the U.S.A. had made remarkable advance in iron and steel production between 1895 and 1913, so that Britain found herself outdistanced. Germany surpassed Britain's output of steel in 1893; the U.S.A. exceeded Britain's output of pig iron and steel by 1890 and by 1913 was producing about half the world output.[4] Between

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[1] CD—Coal and Iron, October, 1899-B.

[2] Despatch to, July 24, 1902 (CD—Coal and Iron, February, 1903-B, No. 13).

[3] CD—Coal and Iron, *Ibid.* Nos. 1-17.

[4] Burnham and Hoskins, *Op. Cit.*, p. 29.

1896 and 1906 the imports of steel in India from Belgium, Germany and other countries steadily increased.[1]

It is significant that the "Home Manufacturers" were not much keen to invest capital in iron and steel industry in India during this period. Major Mahon wrote in 1901 that plenty of "speculative capital" was available for gold mining in India, but iron mining did not attract the investors who "have apparently plenty of scope for investment at the present time in England".[2] Mahon proposed that the Government should be prepared to take up seriously "a project to practically demonstrate the feasibility of utilising the iron ore of the country for steel making". He hoped that if the Government initiated the development of iron and steel industry, "capital would commence to flow in the desired direction".[3] But the idea of starting iron and steel works under the initiative of the Government could not be accepted by the Government which did not want to depart from the *laissez-faire* policy.[4]

On the morrow of the publication of Mahon's Report the Bengal Iron and Steel Company announced that it would undertake the manufacture of steel. The Company wanted to be assured that the Government did not contemplate the starting of iron and steel works on its own and that the Company would be favoured with a standing order for 15,000 tons of steel rails per annum for the first five years.[5] At this stage another Company, the East India Iron

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[1] The following table will show the value of imports of iron and steel:

IMPORTS OF IRON (IN £)

Year	Belgium	Germany	Other countries
1896-97	476,915	31,848	60,114
1901-02	423,857	51,785	89,239
1905-06	322,643	79,130	100,966

IMPORTS OF STEEL (IN £)

Year	Belgium	Germany	Other countries
1896-97	286,966	11,002	4,419
1901-02	656,312	92,656	37,994
1905-06	979,652	176,523	47,725

(Source: *Statistical Abstract relating to British India*, PPHC, 94, 1907).

[2] CD—Coal and Iron, March, 1901-B.
There were 13 Gold-mining Companies at Kolar in the State of Mysore
in 1900 (FD from, No. 161, September, 13, 1900, See Enclosure No. 1).

[3] CD—Coal and Iron, March, 1901-B.

[4] See Chapter, VI.

[5] CD—Coal and Iron, September, 1901-B.
Colonel A. J. Filgate wrote on behalf of *BISCO* to the Government that
the Japanese Government "is now expending a very large amount in estab-

and Steel Syndicate Ltd. was registered in London in October, 1901, which had the object of establishing large iron and steel works in the State of Gangpur or at any other suitable site. But the Syndicate ultimately abandoned the project.[1] The issue of Government assistance to the Bengal Iron and Steel Company was discussed by the Officers of the Public Works Department. It will be useful to refer to the opinions recorded by them, which indicate fairly the direction of official policy with regard to steel manufacture in India. The meticulous care with which they dealt with the whole question is remarkable.

C. W. Hodson, in his note, proposed that the BISCO should be encouraged in its endeavour to manufacture steel. The manufacture of cast-iron by the Company was well established. The annual output of the Barakar Works had reached 20,000 tons; and they were prepared to double it, "having got a second blast furnace ready". The State railways could not indefinitely continue to take so much as the 10,000 tons of pig iron and castings. The Company should "find other uses for its pig iron", and "the manufacture of steel rails is the next step in their programme". The Company should be allowed to try the experiment of "basic" process, which was in use in America. The railway administrations would hesitate to buy large quantities of rails for lines of heavy traffic; but such hesitation "need not extend to small quantities of rails intended for unimportant branches

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lishing iron and steel industry" and that the Government of Canada also was "offering a heavy bounty, amounting to 23 sh. per ton for each ton of steel manufactured".

[1] The reasons why the Syndicate abandoned the project are obscure. The Syndicate was formed in 1901 with Colonel Richard Gardiner as Chairman; the following firms were among the shareholders: Burn and Co. (Calcutta); Kettlewell, Bullen and Co. (Calcutta and London); Heilgers and Co. (Calcutta and London). The Syndicate proposed to raise a capital of £ 400,000 by the issue of 400,000 prefernece shares of £ 1 each. They secured prospecting rights over 10 square miles near Bisra in Chota Nagpur. The Bisra concession was originally obtained by Mr. Zobel from the Raja of Gangpur; Zobel sold it to the Bengal Coal Syndicate who transferred their rights to the East India Syndicate. They wanted a concession in the Jubbulpore district and another concession in "the unoccupied portion" of the Chanda field. The Government expressed their inability to grant the Syndicate the concession in the Jubbulpore district, but they were willing to grant the Syndicate a prospecting licence for iron "over any part of Chanda field which is not covered by the prospecting licence", already granted to J. Tata. Regarding financial assistance the Government was prepared to grant a subsidy of £ 1,500 per annum for ten years. In 1904 the Government removed the restriction upon the grant of mining concessions in the Jubbulpore district (Letter of the Secretary of the Syndicate; Confidential Memorandum, CD—Coal and Iron, February, 1903; *Ibid*, September, 1903; *Ibid*, January, 1904).

part of Chanda field which is not covered by the prospecting licence,"

or lines of light traffic". The Company should, therefore, be well advised to start operations on a small-scale. F. R. Upcott noted that the best way for the State to support the Company "will be to reserve a certain part of our indents to be taken up in India". T. Higham felt that the steel sections, bars, angles, plates and rolled beams, which were required by the General Branch of the Public Works Department, could be obtained from steel works in the country, but he added that the demand of the General Branch would be very small compared with that of the Railway Branch. He warned that the orders of the General Branch would be "smaller as to quantity", and there would be "a much greater variety in the sizes and sections required".[1]

Only one lone voice was raised against the proposed assistance to the Bengal Iron and Steel Company, it was the voice of Major Mahon (who was then the Director-General of Ordnance). Mahon strongly felt that the iron and steel works, to be successful, must be on a large-scale and noted, "I cannot help thinking that the proposals of the Barakar Company are more intended to check development than to aid it, but in any case there should be room for more than one Company."[2] The Locomotive Superintendent of the Jamalpore Workshops also raised an important point: "In the vast commercial undertakings which represent the iron and steel industries of Germany, England and America, India will have to compete unless protected".[3] This was precisely what happened; the nascent iron and steel industry of India had to face the withering touch of foreign competition. There were considerable imports from the United Kingdom and the Continent; the cheaper Continental article

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[1] CD—Coal and Iron, September, 1901, No. 3-7-B.
[2] CD—Coal and Iron, November, 1901, No. 1-6-B.
[3] *Ibid.* The remarkable advance made by Germany and the U.S.A. will be evident from the following figures :

STEEL PRODUCTION (000 TONS)

Year	England	Germany	U.S.A.
1895	3,260	3,830	6,110
1900	4,900	6,360	10,190
1905	5,810	9,510	20,020
1910	6,370	12,890	26,090
1915	7,660	17,320	31,300

(Burnham and Hoskins, *Op. Cit.*, p. 27) was popular with the public, though the cheapness might have been due to inferiority of quality.[1]

Lord George Hamilton in his Despatch, dated 15th March, 1901, wanted the Government of India to favourably consider the demand of the Bengal Iron and Steel Company for a standing order of 15,000 tons of steel for five years.[2] Lord Curzon's Government in their Despatch, dated 5th September, 1901, considered it undesirable "to offer them any standing orders"; they wanted "to make them a firm offer of an annual subsidy equal in amount to 3 per cent on the estimated cost of the plant required for a term of ten years".[3] On 22nd January, 1903 the contract between the Secretary of State and the Bengal Iron and Steel Company was completed. According to the terms of the contract, the total assistance ("subsidy") of the Government of India to the Company would be £ 1,500 per annum (i.e., 3 per cent on a capital of £ 50,000) for a period of ten years, or £ 15,000 in all, and this amount would be reduced by Rs. 3 per ton for every ton of steel purchased by the Government from the Company.[4]

The new plant was fully erected in June, 1904 and steel manufacture started in the month of November.[5] The baby died in the cradle. The steel works were closed in 1906. The conditions under which the Bengal Iron and Steel Company was compelled to close the steel works are of great import, as subsequent investigations showed, for the creation of an indigenous steel manufacturing industry.

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[1] Statement showing the average of the value of imports during the five years ending with the year 1902-03 :

	UK	Germany	U.SA.
IRON	£ 13,35,000	£ 35,000	£ 31,000
STEEL	£ 4,72,000	£ 55,000	£ 29,000

(Minute by Sir E. F. G. Law, F.D. to, No. 324, October, 22, 1903, Enclosure No. 1)

[2] Despatch from, March 15, 1901 (CD—Iron and Coal, September, 1901, No. 5).

[3] CD—Coal and Iron, September, 1901, No. 6. Lord Curzon's Government. proposed that the Company should start operations on a small-scale; that "the Government and the railway companies will for many years to come be their principal customers"; that Bombay and Madras would find it more economical to obtain their supplies direct from England.

[4] Supplemental Contract between the Secretary of State and the BISCO (CD—Coal and Iron, July, 1903, Enclosure No. 3).

[5] CD—Coal and Iron, January, 1905, No. 4-5.

It is undeniable that the steel industry, to be successful, would depend largely on the support of the local engineering industry which will absorb its products. But the Indian engineering industry did not extend its support to the nascent steel industry; it relied largely, if not entirely, on imports.[1] The Stores Committee appointed by the Government of India refers to "the inadequacy and irregularity of the support which had been extended to the manufacture of steel angles, bars, tees, and joists by the large consuming Departments of Government".[2] At the ordinary general meeting of the Bengal Iron and Steel Company, held on 21st March, 1906, the Chairman stated that "in the year ending November last the Company only received from Government 136 orders involving a supply of 365 tons of steel of 68 different sections".[3] The Stores Committee noted that the general opinion as to quality of Barakar steel was favourable; criticism was mainly directed against "the irregularity of delivery and the cost of the article". The Committee's conclusion on the matter is extremely significant: "It seems improbable that any such industry can be profitable, if largely dependent on private demands, especially in view of the very considerable imports from the United Kingdom and the Continent, of articles similar to those which would compete with the Indian product".[4] The Committee pointed out that the promoters of Indian steel industry would have to look for support from the railways which could assure "continuity of orders". The Railway Board could give an impetus to the indigenous industry "by specifying all items of Railway work which could be supplied from such sources".[5]

It seems that the Government of India tried to be wise after the event. In a Note prepared by them for submission to the Secretary of State in March, 1908, the following observations have been recorded: "In the case of the Bengal Iron and Steel Company the inadequacy of the orders placed by the Government Departments is a question of fact. It is to be remembered that these steel works were established in the hope and on the understanding that they would be called upon to supply a fair share of the requirements of Government Departments. Moreover, the State in India is the largest individual consumer of such manufactures, and its support would enable a new industry to tide over the initial difficulties of creating and establishing a market for its product".[1] It was not under fortuitous circumstances that the steel works failed.

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[1] Memo by the Director-General of Stores, dated August 14, 1907 (CD—Stores, 1908, Pro. Vols.)

[2] *Report of the Stores Committee* (1906), p. 15. (ILD—Confidential, Stores, 1906).

[3] *Ibid.*, p. 15.

[4] *Ibid.*

[5] *Ibid.* pp. 15-16. The demands of the Military Works Services. of the Irrigation and Roads and Buildings Branches of the PWD. and of Local Bodies might be large sometimes. but they did not present that "continuity which could be expected from the Railways".

The Bengal Iron and Steel Company survived the crisis of 1906; in 1906-07 its output was 39,246 tons of pig iron.[2] The steel plant, however, remained idle. In 1907 the contract of 1897 (for the supply for ten years of 10,000 tons annually of pig iron and castings) expired, and the Secretary of State was unwilling to renew it. Messrs. Martin and Co., the Managing Agents of the Company, in their letter, dated 20th March, 1911, complained of the inadequacy of orders from Government Departments for castings in the past three years, as a result of which the Company was compelled to reduce its outturn and seek foreign markets for its pig iron. Between 1908 and 1911 Government sources purchased from the Company only 9,426 tons of pig iron and castings.[3] The Company, however, endeavoured to push ahead and the Industrial Commission estimated the normal production of the iron works at 10,000 tons of pig iron per month.[4]

The large-scale manufacture of steel in India owes its development to the enterprise of an Indian entrepreneur—the late Jamshetji Nusserwanji Tata. J. N. Tata is a famous name in the economic history of India, who is remembered with reverence as the founder of the Indian steel industry, though manufacture of steel on a small-scale was undertaken earlier, under Mahon's supervision, in Cossipore Gun and Shell Factory and also in Jamalpore Workshops.

The Tatas accumulated capital mainly through the cotton trade which had long been the favourite field of Indian merchants.[5] Nusserwanji Tata, father of J. N. Tata, achieved much success in the China trade and set up a firm in Bombay with Kaliandas, a merchant, as his partner. In 1858 Jamshetji Tata joined his father's firm and opened a branch in Hong Kong under the name of Jamshetji and Ardeshir Co., the principal partners being Nusserwanji Tata, Kaliandas and Premchand Roy Chand. The firm dealt mainly in cotton and opium and sent to India consignments of tea, silk-goods, camphor, cinnamon, copper, brass and Chinese gold. In the same year Jamshetji established a branch of the firm in Shanghai. During the American Civil War there was a boom in the cotton trade of Bombay when the produce of the great cotton fields of Nagpur, Berar, Gujarat and Southern Maratha country found its way to Bombay to be exported to England. The Tatas and also other Bombay merchants made an enormous fortune in the cotton boom. In 1867 the Tatas secured the contract for the Commissariat during the Abyssinian campaign and reaped several crores of rupees from this contract business. At this stage industrial venture attracted Jamshetji Tata who promoted several cotton mills—the Alexandria Mills in 1869, the Central India Spinning, Weaving and Manufacturing Company in 1874 (in conjunction with his father), the Empress Mills in 1877 and the Swadeshi Mills in 1886.[1]

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[1] *Note on the Remarks of the Director-General of Stores*, (CD—Stores, 1908, Pro. Vols.)

[2] J. G. Cumming, *op. cit.*, p. 23.

[3] Letter from Messrs. Martin and Co., March 20, 1911, (CD—Stores, File No. 24, July, 1911—B).

[4] *Report of the Indian Industrial Commission*, (1916-18), p. 20.
The Company employed 10,000 workers. In 1916 the output was 92,244 tons of pig iron. The Company owned two collieries in the Jharia field, and its net profits were estimated at £ 1,400 in 1909-10 and £ 24,000 in 1910-11 (*Commerce*, January 8, 1913).

[5] From the early nineteenth century the Parsees began to emerge as prominent Indian merchants. In 1812 "many of them (Parsees) were very opulent, and each of the European houses of agency has one of the principal Parsee mer-

The next phase of Jamshetji's life, perhaps the most fruitful period of his life, centred round the establishment of the iron and steel industry. During Lord Curzon's Administration the old regulations for mining and prospecting which, according to Mr. Harris, cooled the interest of Tata in iron and steel projects, were replaced

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chants concerned with them in most of their foreign speculations". (Milburn, *Oriental Commerce* cf. Buchanan, *Op. Cit.*, p. 144). A prominent Parsee merchant, Kharshedji Rustomji Cama (1831-1909), joined in 1850 his uncle's firm, Messrs. Ratanji Hormasji Cama and Co. of Canton and founded in 1855 the first Indian business house in London under the name of Cama and Co., with a branch in Liverpool and made a fortune in the cotton boom during the American Civil War (S. M. Edwardes, *K. R. Cama*, pp. 8,14). Jamshetji Jeejeebhoy made money in cotton and opium trade and during the Napoleonic Wars, "shipped thousands of bales of cotton" and took five voyages to China and was "the boldest speculator of the period". He was raised to a Baronet in 1857 (K. Sorabji, *First Parsee Baronet*). Some of the prominent cotton merchants of Bombay figure prominently in the *Report of the Bombay Bank Commission* : Rustomjee J. Jeejeebhoy (son of Sir J. Jeejeebhoy), B. H. Cama, M. Limjee, Premchand Roy Chand, K. Khemjee, Atmaram Madhowjee, Veerchand Deepchand, Gandass Narrondas. See Minutes of Evidence, PPHC, 15, 1868-69.

[1] F. R. Harris, *Op. Cit.*; pp. 5, 6, 27, 29, 47; also see S. M. Edwardes, *Rise of Bombay*, pp. 239-40. It seems that a major part of capital invested in the cotton industry of Bombay came from established merchants in the cotton trade.

by new rules;[1] his firm secured a prospecting licence for iron which covered the greater part of the iron fields in the Chanda district.[2] J. N. Tata had "the honour to hold several interviews" with Lord George Hamilton. In his letter, dated 31st July, 1902, he wanted an assurance from the Secretary of State that "when making purchases, the Indian Government would be willing, *Ceteris paribus,* to give preference to our manufactures over imported material",[3] especially in view of the fact that the Government was "the largest buyer of iron and steel". Lord Curzon's Government in their Despatch, dated the 29th January, 1903, expressed their desire to give preference to "local production", provided that the quality was not inferior to and the price not higher than "similar supplies obtained through the India Office", and that Tata's Company and other manufacturing firms in India would have "to stand on the same level".[4] J. N. Tata brought over European and American experts to carry on survey work in the Central Provinces. Ultimately the original site of Lohara in the Chanda district was given up; the survey party found in Mayurbhanj State enormous deposits of iron ore, part of which the Tata Iron and Steel Co. began to exploit.[5] J. N. Tata had died in the meanwhile (1904), and his sons built the iron and steel industry on the foundations laid by him. In August, 1907, the Tata Iron and Steel Company Ltd. was registered in Bombay; and the entire capital was subscribed by Indians.[6] The Tatas had to face considerable difficulties in obtaining machinery and trained personnel. In 1909 they did their best to get blast furnaces from England, but failed. They purchased machinery in Germany and had to engage German steel makers. They failed to get a manager from England and had to go to America, where they engaged R. G. Wells. He was succeeded by T. W. Tutwiller, an American expert.[1]

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[1] These rules have been referred to earlier.

[2] Letter from Secretary to the Government of India, RA Dept. (CD—Coal and Iron, July, 1902, No. 2-B).

[3] Letter from J. N. Tata, July 31, 1902 (*Ibid,* March, 1903, No. 2-B).

[4] Despatch to. January 29, 1903, *Ibid,* March, 1903, No. 3-B.

[5] D. R. Gadgil, *Op. Cit.,* pp. 251-52. It was P. N. Bose, an officer of the Geological Survey of India, who wrote to the Tatas that he had found rich deposits of iron in Mayurbhanj State; of Bose Mr. Harris writes, "In the story of the industrial development of India, Mr. Bose is assured of permanent mention". Harris, *Op. Cit.,* p. 180.

[6] Mr. Harris states that Tata's sons, Dorabji and Padshah, spent months in London to raise capital, but had to return to India disappointed. It was the period of the *Swadeshi,* and "from early morning till late at night the Tata Offices in Bombay were besieged by an eager crowd of native investors": in three months' time the entire capital (£ 16,30,000) was subscribed by 8,000 Indians. (Harris, *Op. Cit.,* p. 190). TISCO was registered with a nominal capital of Rs. 2,31,75,000, divided into 200,000 ordinary shares of Rs. 75 each, 50,000 preference shares of Rs. 150 each and 22,500 deferred shares of Rs. 30 each. Messrs. Tata Sons and Co. were appointed Managing Agents. CI—Industries, File No. 19, 1908.

The question of Government assistance to the nascent industry inevitably came up, and it appears that the industry from the very beginning was assured of Government assistance. In its letter, dated the 9th August, 1905, the Commerce and Industry Department guaranteed to purchase from the Tata Iron and Steel Co. 20,000 tons of steel rails annually for a period of ten years.[2] In 1906 the Government of India promised to purchase pig iron "as much as possible from the proposed Works if the quality and price of the outturn are suitable".[3] The Company was also favoured with reduced rates for the carriage of the construction materials and plant for the steel works. With the sanction of the Government of India, the Bengal Nagpur Railway entered into an agreement with the Company in 1909 to the effect that materials and plant "for the initial construction of the Steel Works" would be carried by the Railway "from any station on the Railway to Kalimati" at the reduced rate of 1/15th pie per mile.[4] The Bengal Nagpur Railway also constructed a broad gauge railway from Kalimati to the ore mines at Grumaishini, and the line was opened in 1911.[5]

From the beginning of 1912 the Company started the production of pig iron of different grades; and Messrs. Tata Sons and Co. in their letter, dated 5th June, 1912, hoped that "consistent with the uniformly liberal spirit which the Government of India have dealt with all our representations and the very generous concessions made to our enterprise which more than any others have made an enterprise like the Tata Iron and Steel Works possible, they will extend their support to our pig iron department as they have done to the steel Department".[1] Apparently the Managing Agents were satisfied with the kind of assistance the Government offered to the industry. The Railway Board set up a complete Chemical Laboratory at Sakchi where the testing and inspection of the materials could be arranged.[2] Information was conveyed to local Governments that the Tata Iron and Steel Works was in a position to supply the Public Works Department and other consuming departments pig iron of various qualities and rolled steel sections.[3]

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[1] The Consulting Engineer (Mr. Perin) was also an American. Minutes of Evidence, Vol. II. *Report of the Indian Industrial Commission,* 1916-18; see the evidence of A. McWilliam and T. W. Tutwiller, pp. 355-6, 369.

[2] CD—Stores, September, 1912, File No. 48-B.

[3] Letter from Harvey, Secretary to the Government of India, PWD, July 16, 1906 (CD—Stores, June, 1912, File No. 48-B).

[4] CI—Industries, October, 1910, File No. 29. The Board of Directors consisted of D. J. Tata (Chairman); Thakoe Shaheb of Morvi; Sir Sassoon David; Sir Cowasji Jehangir; Sir V. C. Thakersey; G. Khattan; Fazulbhoy Currimbhoy; N. M. Goculdas; M. A. Tana; A. J. Bilmoria; See *Annual Report of TISCO*, June 30, 1910.

[5] *Annual Report of TISCO*, June, 1911 (CI—Industries, November, 1911, File No. 28). The Company constructed a railroad from Kalimati to the Works.

It seems that "the very generous concessions" stood the industry in good stead in the initial years of its development. The Bar Mill was placed in operation with a single shift on 31st October, 1912, and on 26th May, 1913 a second shift was started. The steel works were turning out excellent steel, and in 1913 "several thousand tons of rails" were passed by the Government Inspector. Three grades of steel were being marketed—British standard, "Bazar" (it fell outside British standard specifications) and "Second Class" (i.e. steel which was slightly defective)". Besides Indian State Railways, the Company managed railways and the engineering firms of Calcutta and Bombay were their customers. The beams and channels and angles were "well received in all markets"; the products of the industry were sold not only in India, but also in Japan, China, Java, Ceylon, Burma, Straits Settlements, Australia and in South and West America. The Company's Bhelatand Colliery in the Jharia field raised in 1912 nearly 60,000 tons of coal. During the first working period (up to 30th June, 1913) a profit of Rs. 8,58,583 was made.[4] The "guaranteed purchase" of 20,000 tons of rails by the Government undoubtedly helped the growth of the iron and steel industry.

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[1] Letter from Messrs. Tata Sons and Co., June 5, 1912 (CD—Stores, June, 1912, File No. 49-B).

[2] Letter from President, Railway Board, June 6, 1912 (*Ibid*). Prof. McWilliam was placed in the Tata Co. for the testing of the materials.

[3] Letter from Government of India, PWD, to the Local Governments, August 12, 1912 (*Ibid*).

From the very beginning excellent pig iron was manufactured. Messrs. Pattinson and Stead of Middlesbrough noted in their *"Report on Pig Iron Manufactured by the Tata Iron and Steel Co."* that the pig irons "are all of very excellent quality . . . The strength of the iron was greatly improved by melting with steel scrap as will be observed from the results of trials made". (CD—Industries, File No. 17, June 1913).

[4] *Fifth Report of the TISCO* for 1910-11 (CI—Industries, File No. 28, November, 1911).

Seventh Report of the TISCO for 1912-13 (CI—Industries, File No. 17, December, 1913).

Net profits during the year ending 30th June, 1914 amounted to Rs. 22,63,780. See the *Eighth Report of the TISCO* for 1913-14, (CI—Industries, December, 1914).

The prestige of the Company rose high as it fulfilled contracts for rails for State Railways.[1] In 1914, therefore, the prospects of the Tata Iron and Steel Company were bright. It was during the war which "poured money into their coffers" that the Iron and Steel industry made appreciable progress.[2]

The Returns transmitted by the Government of India to the Secretary of State give the amount of expenditure on iron and steel imported through the Secretary of State, on European stores purchased in India and on iron and steel manufactured in India. The figures given below are extremely instructive. The purchase of iron and steel manufactured in India was insignificant. It may be mentioned that the expenditure on iron and steel manufactured in India includes the cost of goods obtained from Government factories.[3] The figures indicate the potentiality of the market for iron and steel in India when she was passing through the railway age, and it was to this reality that Major Mahon tried to focus attention in 1899, and emphasised the importance of developing a large-scale iron and steel industry under the agency of the State. The Government decided to leave the matter to private enterprise. But when the Bengal Iron and Steel Company started the manufacture of steel in 1904, Government purchase was very small, and steel sections had to be closed in 1906. The contract with the Company for the supply of iron expired in 1907 and it was not renewed. It will be revealed from the figures that the expenditure on iron manufactured in India considerably declined between 1902 and 1914. The Tata Iron and Steel Company came into the picture only on the eve of the War and could make progress under the favourable conditions created by the War. Another interesting fact emerges from the figures. The Government of India could not dispense with the purchase of European iron and steel imported into India, though these were not always of the best quality. Expenditure under this head benefited the Indian mercantile houses who were primarily interested in the easy profits made through commerce.

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[1] Minutes of Evidence, Vol. II., *Report of the Indian Industrial Commission* (1916-18); See the evidence of A. McWilliam. The order of 20,000 tons of rails amounted to some £ 160,000 or about 24 lakhs of rupees every year.

[2] In 1916 steel capacity was nearly 17,000 tons per month; the rolling mills produced about 120,000 tons of rails and smaller sections annually. The Company owned 9 large coal mines. *Report of the Indian Industrial Commission*, 1916-18, p. 21.

[3] Iron and steel was manufactured in the Government Factories. See Chapter VI.

IRON[1]

Year	Value of stores imported through the Secretary of State Rs.	Value of European stores imported in India Rs.	Value of stores manufactured in India Rs.
1882-83	33,50,963	12,00,439	3,39,676
1883-84	39,37,792	17,06,285	5,06,810
1884-85	43,33,611	10,82,925	9,18,806
1885-86	42,92,012	9,05,892	7,56,933
1886-87	1,40,99,189	8,33,240	3,32,056
1887-88	77,07,017	7,01,767	6,64,872
—	—	—	—
1891-92	53,70,743	6,92,748	8,89,101
1892-93	83,56.451	4,73,532	13,24,650
1893-94	54,97,578	6,96,405	10,51,523
1894-95	55,11.456	5,46,282	10,16,450
1895-96	51,17,502	4,12,686	9,58,860
1896-97	26,59,535	5,88,587	9,26,862
1897-98	13,79,059	3,25,373	5,39,930
1898-99	8,05,045	2,69,974	7,57,506
1899-1900	—	6,69,662	11,48,693
1901-02	—	3,87,753	11,03,883
1906-07	—	6,42,048	6,34,488
1911-12	—	2,42,833	2,18,820
1913-14	—	3,73,514	3,40,409

STEEL

Year	Value of stores imported through the Secretary of State Rs.	Value of European stores imported in India Rs.	Value of stores manufactured in India Rs.
1882-83	13,50,795	9,16,616	nil
1883-84	30,90,669	5.27,531	nil
1884-85	8,65,751	22,861	397
1885-86	48,33,703	72,278	16
1886-87	67,80,157	31,084	nil
1887-88	59,85,119	10,139	nil
1891-92	45,63,223	14,856	2,762
1892-93	52,12,656	7,014	3,817
1893-94	57.74,238	14,692	5,998
1894-95	64,32.041	15,264	nil
1895-96	53,58.795	33,951	4,363
1896-97	23,25,437	37,993	19,907
1897-98	26.61,636	1,22.410	10,118
1898-99	9,23,238	1,10.838	22,976
1901-02	—	1,44,031	72,821
1905-06	—	4.11,904	1,32,446
1912-13	—	3,38.072	1,68,785
1913-14	—	3,84,267	1,68,324

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[1] Figures have been collected from the Annual Returns. Stores imported through the Secretary of State have been omitted from the Returns from 1899-1900.

The figures speak for themselves. The value of iron and steel imported through the Secretary of State was considerable. To this should be added the rapidly rising expenditure on railway stores. Only the beginnings of large-scale manufacture of iron and steel had been laid in India on the eve of the War; and only simple forms of steel, such as rails, were being produced. The total capacity of the two Indian iron works was only a fraction of the total amount of iron and steel imported.[1]

Nevertheless, the growth of the Tata Iron and Steel industry, an Indian enterprise, was a momentous event which contemporary public-minded men did not fail to hail.[2] It created conditions for the further advance of industrialisation in India. The large-scale manufacture of steel was bound to open up new opportunities for industrial progress. The iron and steel industry also opened new avenues of employment to the people. The number of employees rose from 4,235 in 1910 to about 9,000 in 1913.[3] The majority of the workers came from the agricultural classes. They were found to be "intelligent and quick to learn"; they generally shaped well when properly trained. Indian workers worked as heaters in the mills, moulders and helpers in the blast furnaces, foremen on the coke ovens, crane drivers, rollers at the blooming and bar mills.[4] Jamshedpur began to emerge as an industrial town and as a beacon of hope to the rising class of Indian *bourgeoisie* who had made Bombay and Ahmedabad their citadels.

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[1] *Report of the Indian Industrial Commission* (1916-18), p. 50. Imports of iron and steel in India in 1913-14 (including galvanised iron, tin plates, railway plant, etc.) amounted to over 1,250,000 tons valued at 25 crores of rupees. In addition to this there were large imports of manufactured iron and steel in the form of machinery and mill work, motor cars, and under other heads.

[2] The Indian Industrial Conference at its third session held at Surat (December, 1907) adopted a resolution expressing "its sense of satisfaction at the successful formation of the Tata Iron and Steel Company, Ltd., with the help entirely of capital raised in India."

[3] *Annual Report of TISCO*, June, 1910 (CI—Industries, November, 1910, File No. 29); also see the *Seventh Report of TISCO* (CI—Industries, December, 1913, File No. 17).

[4] Minutes of Evidence, Vol. II (See the evidence of T. W. Tutwiller, General Manager), pp. 354-56, *Report of the Indian Industrial Commission* (1916-18). Tutwiller hoped that "Indians will be able to replace Europeans up to a certain point." The number of employees was about 16,000.

CHAPTER V

ENGINEERING INDUSTRY

NEW opportunities for the engineering industry opened up during the opening years of the Crown Administration. There was generated a large and growing demand for a wide variety of engineering goods in the country as the railways and roads, bridges and irrigation works, telegraphs, public buildings and military barracks were being constructed.[1] There was a building boom.[2] The Government was the single biggest purchaser of "engineering stores, plant and machinery". We will presently see that the Indian engineering industry, which was in the initial phase of development, repeatedly raised the demand that a definite proportion of the requirements of the consuming departments "in respect of bridges, railway material, rolling stock and similar stores" should be reserved for Indian manufacturers. In fact, the support of the Government was essential for the development of the nascent industry, which was new in the country, especially in view of foreign competition.

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[1] The construction of new barracks for European troops at almost every military station in India commenced in 1865 (FD to, No. 73, March 8, 1867-B).

[2] The Financial Statement for 1877-78 gives the following figures on the Cost of Military Buildings in India:—

Year	Rs.
1869-70	1,84,94,790
1870-71	1,25,13,140
1871-72	1,20,33,150
1872-73	1,16,65,580
1873-74	1,12,29,600
1874-75	1,18,59,260
1875-76	1,33,77,380

(Minute by Sir John Strachey, CD—Accounts and Finance, January, 1879, B).

The expenditure on Civil buildings also rose between 1861 and 1870:

CIVIL BUILDINGS

Year	£
1861	390,717
1866	880,888
1867	750,553
1869	829,321
1870	773,902

(PPHC, 69, 1871, *Statistical Abstract*).

Apart from Government demand there was a large private demand for engineering goods, and we will presently see that private demand stood the industry in good stead, especially in the initial years of development. Private demand for engineering goods began to increase in volume as large developments were carried out by the Port Trusts to meet the growing needs of an increasing trade. The ports of Calcutta, Bombay, Madras, Karachi and Rangoon needed improvements and had to be developed; practically the whole of India's foreign trade was concentrated in these ports. The importance of the Calcutta Port can be understood from the fact that it served the growing jute, tea and coal industries, the wheat and seeds traffic of Bihar and the United Provinces and the agricultural areas of Bengal.

The initial expenditure on the construction of the port was undertaken by the Government, and by 1870 four jetties had been built. The capital debt of the Port Trust amounted to Rs. 17,65,000 in 1870 when the Trust was created; the Government remitted a large portion of the debt actually due to the Trust.[1] The Trust was to "be held liable for only the interest due on the capital debt".[2] The importance of the Bombay Port particularly increased during the period of the American Civil War. The Suez Canal was opened in 1869. The management of the harbour was entrusted to Government departments, and this system continued till 1863, when, in response to the demand of the Chamber of Commerce for the improvement of the harbour, a Harbour and Pilotage Board was created. The Board remained in existence till the formation of the Port Trust in 1873.[3] The Government had expended nearly 280 lakhs of rupees on the Bombay Port, of which about 180 lakhs were spent on the purchase of Elphinstone Company's property.[4] The capital debt of the Port Trust on June 25, 1873, stood at Rs. 219,42,142.[5]

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[1] CD—Accounts and Finance, March, 1871, and July, 1871, B. On October 17, 1870, the Lt.-Governor appointed the following Commissioners: V. S. Schalch, Chairman; W. D. Bruce; T. A. Apcar; J. A. Crawford; F. G. Eldridge; Stuart Hogg; J. D. Knight; J. F. Rutherford and T. H. Wordie.

[2] *Ibid.*

[3] *Bombay City Gazetteer*, Vol. III (1910), pp. 66-67.

[4] CD—Accounts and Finance, April, 1871, B. The Elphinstone Land and Press Company (formed in 1862) entered into a contract with Government to provide a hundred acres for the terminus of the GIPR; in return the Company received the right to reclaim from the sea 250 acres. Development of the port followed, but the Government decided to buy out the property of the Company and transfer it to the charge of a public trust.

[5] Of this amount, the debt of Rs. 2,10,97,464 bore interest at 4 per cent and the debt of Rs. 8,44,678 bore no interest. (Memo from M. W. Willoughby,

an entirely novel undertaking in the East". The Government was obliged to advance loans to the Port Trusts for the construction and extension of the docks. The expenditure on the Prince's Dock amounted to Rs. 75,68,123 on March 31, 1880, and the entire sum was obtained as a loan from the Government of India.[1] The Calcutta Port Trust failed to raise a loan of 75 lakhs from the public for the construction of the Kidderpore Docks in 1885; the Government of India undertook to raise the amount "by means of a rupee loan" and lend it to the Trust.[2] In the same year the Government advanced a loan of 96 lakhs to the Bombay Port Trust for the extension of the Prince's Dock.[3] Between 1887 and 1889 the Government advanced Rs. 1,357,500 for Kidderpore Docks and Rs. 848,000 for Prince's Dock as loans to the Port Trusts.[4] The Port Trusts were also authorised to raise funds by borrowing from the public. In fact, the Port Trusts required large sums of money in order to carry out port and harbour improvements and for the extension of the docks.[5] The total capital debt of the six Port Trusts stood at £6,785,916 in 1896-97, £7,472,683 in 1901-02 and £9,010,899 in 1905-06.[6]

Another potential market for the engineering industry opened up, as the corporations and municipalities began to grapple with the problems of urban sanitation. In fact, the condition of sanitation was dreadful when the Crown took over India's administration, and the necessity of constructing water works and drainage and sewerage systems attracted the attention of the Government. Water supply and drainage projects required large sums of money, and the heavy expenditure which these projects entailed could not be defrayed from ordinary revenues. An act was passed in 1871 and amended in 1879 to enable municipalities and other local bodies to borrow either from

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[1] Letter from J. Macdonald, Secretary to the Government of Bombay, Marine Department, May 6, 1880. CD—Accounts and Finance, January, 1881, B. The expenditure under the head of machinery amounted to Rs. 9,48,629 ; Sir W. Armstrong and Co. of London secured the contract for the supply of engines, cranes, dock gates, bridge etc.; the dredging plant, also imported from England, cost Rs. 6,34,680.

[2] FD to, No. 377, December 17, 1885, Pro. Vols.

[3] *Ibid.*

[4] PPHC, 123, 1889.

[5] The Victoria Docks, Bombay, was completed in 1888, and the Merewether Dry Dock, Bombay, in 1891. The total expenditure of the Bombay Port Trust from June, 1873 to March 31, 1909 on the construction and extension of the docks and of other works amounted to about 827 lakhs of rupees ; of this amount, Prince's Dock accounted for 90½ lakhs, Victoria Dock 120 lakhs, Merewether Dock 12 lakhs. *Bombay City Gazetteer*, Vol. III, p. 79.

[6] **PPHC, 94, 1907.**

Madras was "an open road stead with a surf-beaten coast line", and in 1868 the Madras Chamber of Commerce submitted "the first definite proposals" for a harbour. The Government of India approved of the scheme in 1874; Lord Salisbury alluded to "the imperial importance" of the Madras harbour and sanctioned the proposals of the Government of India.[1] The construction of the harbour commenced in 1878 and it was completed in 1896.[2] The total cost amounted to 126 lakhs. By the Madras Act II of 1896 the harbour was vested in the Harbour Trust Board ; in 1905 the Madras Port Trust was created.[3] The port of Rangoon, the chief port of Burma, was constructed between 1868 and 1878; the total cost was about 10 lakhs. It was, however, considered "unnecessary to treat the outlay already incurred for the benefit of the Port as a debt to be recovered from the Commissioners", and the property of the port was "made over unencumbered to the Commissioners in trust".[4] The Port Trust of Karachi was created in 1886 and of Chittagong in 1888.[5]

The Port Trusts had to incur considerable expenditure in order to make provision for wharves and jetties, sheds and warehouses, cranes, dredgers, machinery and other stores, and hence the demand for a wide range of engineering goods. The Port Trusts also undertook the construction of docks; the Bombay Prince's Dock was opened in 1880, and the Kidderpore Docks were started in 1884-85. The construction of docks entailed heavy expenditure, "a dock being

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Secretary to the Government of Bombay, Marine Department, dated 23rd August, 1881. CD—Accounts and Finance, October, 1881, B. The Government considered it inexpedient to impose on the trade of Bombay "any unreasonable burdens"; it was felt that "it is wholly impossible for the Bombay trade to pay interest on 280 lakhs"; in the interests of the cotton trade, "very great care is needed" in dealing with the port dues (Notes of the Finance Department of India, April, 1871, CD—Accounts and Finance, April, 7871, B.).

[1] FD to, No. 228, August 4, 1881. Salisbury's despatch of March 11, 1875 has been quoted in this despatch. £ 628,000 was advanced by the Government as a loan for the Madras Harbour Works.

[2] CD—Accounts and Finance, September, 1904, Nos. 391-98. The cyclone of 1881 nearly destroyed the harbour works; construction was again undertaken in 1883.

[3] *Imperial Gazetteer of India,* (Provincial Series), Madras, Vol. I (1908), pp. 510-11.

[4] Letter from A. O. Hume, Secretary to the Government of India, Department of Revenue, Agriculture and Commerce, June 24, 1878. Also see the *Report on the Port of Rangoon* by E. Darlington. CD—Accounts and Finance, August, 1878, B.

[5] C. W. E. Cotton, *Op. Cit.,* pp. 51, 79. The Karachi harbour was constructed between 1869 and 1873 at a cost of 7 lakhs. *Imperial Gazetteer of India,* Vol. XV, (1908).

the Government or in the open market. Bombay took the lead, and the Vehar water works were completed in 1858, the Tulsi water works in 1879, and the construction of the great Tansa water works commenced about 1885 and were opened in 1891-92.[1] After the passing of the Act VI of 1863, Sir Stewart Hogg took up "the combined system of drainage and water supply" in Calcutta. The construction of the Pulta water works, the first water works of Calcutta, began in 1865. A consolidating act was passed in 1876, and the Calcutta Corporation undertook between 1882-83 and 1894-95 the extension of water works and the construction of sewers on a large scale.[2] Madras had not developed into a great commercial centre like Bombay or Calcutta, and suffered from a shortage of funds. The scheme of a protected water supply for the Madras city was finalised in 1872.[3] But there was yet no adequate water supply, no proper system of drainage. A new municipal act was passed in 1904, and Madras began to tackle its problems of water supply and drainage on a large scale.[4] By 1890 the towns of Karachi, Agra, Allahabad, Benares, Cawnpore, Lucknow, Meerut and Jubbulpore were provided with water works.[5] As the water works, drainage and sewerage systems were being constructed in the Presidency towns and in the districts, there was generated a large demand for iron castings, cast-iron pipes and sanitary appliances. The expenditure of the municipalities on water works was rising between 1884-85 and 1905-06.[6] It is evident that the Government had begun to provide the elements of a reasonably decent life, although much still remained to be done, particularly in districts.

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[1] *Bombay City Gazetteer*, Vol. II (1909), pp. 155, 182-83.

[2] S. W. Goode, *Municipal Calcutta*, pp. 184, 190, 210. Pumping stations were built at Pulta and Tullah; the total cost of water-works up to March 31, 1914, amounted to over 288 lakhs of rupees.

[3] C. S. Srinivasachari, *History of the City of Madras* (1939), p. 283.

[4] *Cambridge History of India*, Vol. VI, pp. 528-29.

[5] *Imperial Gazetteer of India*, Vol. IV, pp. 471-73; also see Vols. XIV and XV.

[6] EXPENDITURE ON WATER WORKS
(including capital outlay)

Year	Amount (in tens of Rupees)
1884-85	261,345
1890-91	914,155
1895-96	532,738
1900-01	213,579
1905-06	318,965

(The figures have been taken from *Statistical Abstract* relating to British India, see PPHC, 86, 1892; 94, 1905; 94, 1907).

The scope for the engineering industry, therefore, widened considerably during the first two decades of the Crown Administration, and it is noteworthy that some of the engineering firms were founded in this period. The firm of Messrs. Richardson and Cruddas was started in 1858. They undertook the construction of a number of bridges in various parts of India, and also executed iron-work and roofing of Army Head Quarters at Simla, iron-work for barracks and Commissariat stores at Quetta.[1] In 1867 the firm of Messrs. K. L. Mukherjee and Co., a Bengali enterprise, was founded at Shibpur.[2] In the same year Messrs. Massey and Co. started an engineering firm at Madras.[3] Messrs. Burn and Co. and Messrs. Jessop and Co. were old firms engaged in the trade. The origins of Burn and Co. may be traced back to the year 1781 when it was established as a firm of "Architects and Builders in Calcutta, and Engineers, Iron and Brass Founders at Howrah". This firm, under John Gray, began to be interested in civil and mechanical engineering. Between 1851 and 1859 Gray laid 100 miles of track for the East Indian Railway "in some of the worst-affected areas during the perilous days of the Mutiny".[4] In 1895 Messrs. Burn and Co. became a limited liability company. Messrs. Jessop and Co. started their firm in 1778 and gradually built up the Phoenix Iron Works.[5] Although the firm of Messrs. Martin and Co. was formed in 1892, its beginning may be traced earlier. In 1850 Acquin Martin (later Sir Acquin Martin) came to India to work for Messrs. Walsh Lovatt and Co. and quickly earned a great reputation by building aqueducts and water-works. His association with R. N. Mukherjee, who had also been engaged in building water-works on behalf of T. C. Mukherjee and Co., led to the formation of the firm of Martin and Co. in 1892. Martin and

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[1] Messrs. Richardson and Cruddas mentioned the following bridges constructed by them with native labour: Pegu bridge; Poorna River bridge, Ellichpur; Bhuki bridge, Surat; Gawalior bridge; Travancore bridge; Tharwaddy bridge. (Letter, dated August 9, 1888, CD—Accounts and Finance. March, 1889-B.). It may be mentioned, in passing, that some of the best bridges in India were constructed between 1858 and 1914; European engineers and Indian workers built these bridges for the people of India.

[2] The Shibpur Iron Works, (Howrah) manufactured small and heavy castings, hand pumps, brackets, small machine parts, tea-garden structures. (*Bengalee*, 28th January, 1905; *Howrah District Gazetteer*, p. 108).

[3] Minutes of Evidence, Vol. III, *Report of the Indian Industrial Commission* (1916-18), pp. 295-97.

[4] See the brochures recently published by Martin Burn Ltd.: *The Martin Burn Story* and *Martin Burn Ltd.—A Historical Note*.

[5] Letter of Messrs. Jessop and Co., March 17, 1886 (CD—Coal and Iron, April, 1886, No. 1-2-B).

Co. achieved much success in building water works, drainage systems and light railways.[1]

We will now deal with the part played by Government spending in the development of the engineering industry. It seems that the engineering firms had to carry on a sustained movement for many years in order to secure relaxation of the Stores Rules. During the early years of the Crown Administration there was no question of obtaining stores in the Indian market. It was only in 1876 that the policy of purchasing Indian manufactures in the local market was first adopted. But this relaxation of the Stores Rules did not apply to the engineering industry; it was pointed out in Lord Salisbury's Despatch that there were certain classes of stores, "such as special machinery and appliances, including engineering, railway and telegraph plant and materials", which would have to be obtained through the Stores Department of the India Office.[2] In 1879 the Government of India removed "railway plant and materials" from the list of stores which would have to be obtained through the India Office.[3] In Hartington's Financial Despatch, dated 27th May, 1880, it was pointed out that the purchase in the local market of "railway plant and material" should be "limited to articles usually procurable in the local market", and should not be "extended to purchases in England, either directly or through agents".[4] The important Resolution of 1883, which was adopted by Lord Ripon's Government, has already been referred to. This Resolution did not place any restriction on the class of articles of "*bona fide* Indian manufacture" which officers of the Consuming Departments could purchase in the Indian market. The Indian engineering firms welcomed this Resolution; and it seems that they increased their plant and appliances.[5] But their hopes were soon belied; they felt that the Despatch of the Secretary of State, dated the 26th May, 1887, marked the reversal of "the liberal and beneficent policy" of Lord Ripon's Government.[6] In this Despatch the Secretary of State pointed out the danger of purchasing engineering plant and materials in India. This point was further emphasised in the Despatch of the Secretary of State, dated the 28th July, 1888, in which the Government of India was asked to issue instructions "with a view to limiting to the utmost the local purchase of building materials not produced in India, such as iron, steel, tools and plant, and especially of machinery".[1]

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[1] See the *Martin Burn Story*. Messrs. Martin and Co. built the Howrah-Amta and Howrah-Shiakhala light railways between 1897 and 1898. *Howrah District Gazetteer*. p. 126.

[2] FD from, No. 477, December 7, 1876, B.

[3] FD from, No. 166, May 27, 1880, B. The Resolution of Governor-General in Council, August 4, 1879 has been quoted in this Despatch.

[4] FD from, No. 166, May 27, 1880, B.

[5] Memorial submitted by Messrs. Burn and Co., Jessop and Co. and Richardson and Cruddas, October 9, 1895 FD to, No. 65, March 11, 1896—Enclosures.

[6] *Ibid.*

The Returns reveal that there was a gradual decrease in the expenditure on such stores as building and engineering materials, and tools and plant which were of Indian manufacture.

I. BUILDING AND ENGINEERING MATERIALS

Year	Value of stores (in Rupees)
1882-83	83,018
1883-84	44,474
1884-85	33,349
1885-86	26,052
1886-87	3,688
1887-88	7,215
II. TOOLS AND PLANT	
1882-83	—
1883-84	2,33,811
1884-45	1,55,509
1885-86	1,52,515
1886-87	88,711
1887-88	37,909

In 1888-89 the matter of Government assistance to the Indian engineering industry became the subject of an interesting discussion which was initiated by Messrs. Richardson and Cruddas. The long correspondence which passed between Messrs. Richardson and Cruddas and the Government of India, between the Government of India and the Secretary of State, raised issues which had a direct bearing on the growth of the engineering industry. We will refer only to those portions of this correspondence which throw light on the prospects of the engineering industry and the policy pursued by the Indian Government.

Messrs. Richardson and Cruddas in their letter, dated the 9th

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[1] FD from, No. 192, July 28, 1888.

August, 1888 sought permission to tender for the supply and manufacture of an iron bridge over the Sabarmati river in Ahmedabad. They had extended their works and increased their plant "for the speedy and efficient outturn of structural iron-work of this class" and employed a staff of 1,200 skilled native workmen who had received training during the past twenty-eight years. They had succeeded "in creating a large and valuable industry previously foreign to the country", and with "reasonable support" from the Government they could further extend their already extensive works. Government support was of particular importance, since construction of bridges was "almost exclusively carried out by the Government".[1]

The Government of India was not satisfied that the iron-work which Messrs. Richardson and Cruddas would supply was of "*bona fide* Indian manufacture" : "The bridges to which you refer appear to be entirely constructed of materials which were probably manufactured up to a certain point in England".[2] Messrs. Richardson and Cruddas gave a definition to the term "*bona fide* Indian manufacture" which, according to them, applied to "the product of any recognised and distinct industry which may be carried on in this country". They claimed that the "bridge material and iron-work" constructed by them was of Indian manufacture; well-known English firms such as Messrs. Westwood and Baillie, Jesoph Westwood and Co., Head Wrightson and Co. and many others had to purchase the raw material in the form of bars, plates and rolled girders from the rolling mills. They were not seeking "protection duty", but the support of "a moderate portion of Government work".[3]

Lord Lansdowne succeeded Lord Dufferin in 1888, and on the 5th March, 1889, his Government, in a long Despatch to the Secretary of State, recommended some relaxation of the rigid rules that were in vogue, especially in relation to bridge-work, jetties, iron-roofing and similar work. We will quote a remarkable passage from this despatch which is indicative of an awareness of the realities of the situation : "In making this last recommendation we are greatly influenced by the fact that without the chance of a share of Government custom, industries of the nature of that promoted by Messrs. Richardson and Cruddas have no very large opening ; and that it is highly desirable that encouragement should be given to local firms to start branches of industry which would render us more independent of England in meeting our many wants; would enable us to pay in India in silver instead of remitting to England, and would also give employment other than agricultural to large number of labourers, and help to supply that diversity of occupations which is so great a desideratum in India".[1]

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[1] CD—Accounts and Finance, March, 1889. The correspondence between Messrs. Richardson and Cruddas and the Government of India will be found in the Enclosure of Despatch No. 65 of 1889.

[2] Letter from the Under Secretary to the Government of India, P. W. Dept., October 5, 1888 (CD—Accounts and Finance, March, 1889, No. 43).

[3] Letter from Messrs. Richardson and Cruddas, October 17, 1888 (*Ibid*). They drew the attention of the Government to the Resolution of 1883, which reminded Government officers that "there is no reason why articles manufactured in India should not be obtained locally, even though the raw material necessary for their manufacture may have been originally imported from Europe".

It seems that the necessity of assisting the Indian engineering industry was deemed to be of crucial importance, especially in view of the conditions of the times. The employment-aspect of industrialisation found a prominent place in this despatch. It was not fortuitous. The development of the engineering industry could create new avenues of employment for the mass of agricultural labourers and relieve the increasing pressure on land. The famous Dufferin Enquiry of 1888 had revealed the poverty and the low level of living of the agricultural labourers and small tenants.[2] The exchange problem had become a "continually growing evil" from 1877-78, so that the Government of India had to remit to England "more than forty millions of rupees in excess of the amount that would have been necessary had that fall not taken place".[3] The

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[1] Despatch to, No. 65 of 1889 (CD—Accounts and Finance, March, 1889-B).

[2] The *Enquiry into the Economic conditions of the lower classes of agricultural* population was ordered by Lord Dufferin in 1888; the Dufferin Enquiry which runs into about 900 pages was not published, but William Digby was able to get access to some of the papers on this Enquiry which he used in *Prosperous British India.* See R. C. Dutt, *Economic History of India in the Victorian Age,* pp. 608-11 ; also see the paper of Dr. B. M. Bhatia on the Enquiry published in *Contributions to Indian Economic History* (December, 1960). There were layers within the agricultural population: peasants with land, tenants, agricultural labourers without land; Dr. Bhatia notes : the agricultural labourers and tenants suffered from "chronic hunger", and had "a miserably low standard of living".

[3] FD from, No. 20, January 28, 1886. See Enclosures No. 2.

LOSS BY EXCHANGE

Year	£
1877-78	1,554,922
1878-79	3,225,831
1879-80	2,926,403

(*Contd.*)

exchange problem could not but seriously affect Indian finance. The development of the engineering industry could enable the Government to reduce the sterling payments in England for engineering stores. It seems, however, that the Secretary of State was inflexibly (and also consistently) opposed to a relaxation of the Stores Rules, and the engineering industry had to continue their heroic struggle.

In 1890 thirty-five firms engaged in the iron and engineering industries memorialised the Government of India urging relaxation of the restrictions imposed upon purchase of iron and steel work manufactured in India. There was also a representation from the Chambers of Commerce of Madras and Karachi. The Government of India averred that the operations of engineering firms were being "hampered by the existing rules".[1] In his Despatch, dated the 8th January, 1891, Lord Cross expressed his willingness to sanction some relaxation of the rules; but this relaxation was "only for economy"; and the Government of India would guard "against any claim for the protection of local industry".[2] The Government of India adopted a Resolution, dated 25th June, 1891, which permitted, in certain cases, the purchase of "less important manufactured articles of iron and steel made up in India from imported materials"; but the whole

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LOSS BY EXCHANGE (*Contd.*)

Year	£
1880-81	2,716,809
1881-82	3,556,700
1882-83	3,081,383
1883-84	3,838,756
1884-85	3,252,900

The Calcutta Trades Association addressed a memorial to the Secretary of State on the exchange problem (FD from, No. 315, October 28, 1886). The Committee appointed in 1889 to examine the Home Charges recommended "greatest caution" in regard to the increase of the sterling liabilities of the Indian Government; money required for the new railways and irrigation works, for docks, for any other public works "must be obtained in India"; Government Departments were urged "to use articles made in that country, when of an ordinary character and not needing special inspection during manufacture". (FD from, No. 144, July 4, 1889, Pro. Vols.).

[1] FD to, No. 338, October 15, 1890.

[2] FD from, No. 3, January 8, 1891. In the Enclosures a *Memorandum by the Consulting Engineer* (November 14, 1890) is annexed. A. M. Rendel, the Consulting Engineer, was impressed with "the advance made in the manufacturing powers of the country"; "workmanship is now to be found in India, or may be easily created, equal to most of the ordinary requirements of railways, except boilers and engines and at much less cost than in England"; "it will be well to make a trial of the manufacture in India". Rendel also observed that "a large number" of the firms, whose names were attached to the memorial, were "agents for English manufacturers"; work given to them "would be executed in England or in Europe".

of the supplies in the case of Railways was excluded ; and the following conditions were enforced which still further restricted the purchase of such goods—"The articles locally supplied were not to be imported into India in a finished or partly finished state" ; "the price was not to be in excess of that at which similar articles could be obtained by indent on the Secretary of State" ; and "the quality was not to be inferior to that of English supplies".[1]

This Resolution could not satisfy the engineering firms, and the reasons should be obvious. The products of the iron and engineering industries became a category by themselves ; they were to be denied the encouragement which officers of purchasing departments could extend, according to the Resolution of 1883, to articles of "*bona fide* Indian manufacture". The new relaxation of the rules was to be limited to the purchase of "less important manufactured articles of iron and steel".

The Indian engineering firms watched the effects of the Resolution of 1891, and it seems that they were disappointed. In October, 1895 representatives of Messrs. Burn and Co., Jessop and Co. and Richardson and Cruddas called at the India Office and memorialised the Secretary of State. They complained of the "meagre relaxation" and particularly referred to the exclusion of all railway material which appeared to them to be "distinctly repressive and inimical to the interests of both state and people".[2] In his Despatch, dated 21st November, 1895, the Secretary of State could not recommend any relaxation beyond what had been contemplated in the Resolution of 1891.[3]

More than three decades had passed since the Crown took over India's Government ; but the multiplicity of checks imposed on the purchase of iron and steel work manufactured in India had not been removed. For the engineering industry, therefore, it was a period of lost opportunities ; the industry enjoyed a brief spell of prosperity only during the years of Lord Ripon's Administration. The "Home Manufacturers" supplied, in the main, the requirements of India in engineering and building materials, tools and plant and machinery. The statement of expenditure on stores imported through the Secretary of State and on European stores purchased in India will fairly illustrate this point. It will be evident that the Government spent large sums of money on the purchase of imported European stores, generally on grounds of economy and convenience. The figures will also reveal the potential market in India for such goods. These figures have been collected from the Annual Returns of Expenditure.[1]

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[1] FD to, No. 113, May 8, 1895. The Resolution, No. 2650 dated June 25, 1891 is annexed in the Enclosure.

[2] Memorial of Messrs. Burn & Co., Jessop & Co. and Richardson and Cruddas, October 9, 1895 (FD to, No. 65, March 11, 1896 ; see Enclosures).

[3] This Despatch will be found in the Enclosures to the Despatch from G.G. in Council, No. 65, March 11, 1896.

TABLE I. BUILDING AND ENGINEERING MATERIALS

Year	Value of stores imported through the Secretary of State. Rs.	Value of European stores imported in India. Rs.
1882-83	45,209	1,21,830
1883-84	4,201	2,41,607
1884-85	36,090	2,64,142
1885-86	2,06,082	1,45,451
1886-87	1,52,535	6,61,826
1887-88	2,27,360	55,246
1891-92	3,52,919	2,04,191
1892-93	1,16,043	11,088
1893-94	1,57,037	33,121
1894-95	8,056	18
1895-96	39,223	nil
1896-97	98,700	76,068
1897-98	92,669	53,966
1898-99	40,599	70,485

TABLE II. TOOLS AND PLANT.

Year	Value of stores imported through the Secretary of State. Rs.	Value of European stores imported in India. Rs.
1882-83	—	—
1883-84	3,13,566	4,60,472
1884-85	2,20,026	2,65,800
1885-86	3,10,436	5,09,837
1886-87	12,18,156	2,77,909
1887-88	8,42,258	1,87,918
1891-92	3,49,196	2,31,786
1892-93	8,79,020	4,08,086
1893-94	4,97,877	47,130
1894-95	2,93,336	17,722
1895-96	2,91,776	9,671
1896-97	3,69,973	71,219
1897-98	39,65,519	46,199
1898-99	15,75,236	52,992

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[1] Transmission of Annual Returns started from 1882-83.

TABLE III. MACHINERY

Year	Value of stores imported through the Secretary of State. Rs.	Value of European stores imported in India. Rs.
1882-83	18,60,668	1,09,021
1883-84	18,49,349	2,17,891
1884-85	14,12,963	2,46,640
1885-86	42,73,283	2,08,559
1886-87	29,51,617	1,00,085
1887-88	19,72,912	1,23,341
1891-92	12,61,068	74,315
1892-93	10,47,271	70,080
1893-94	10,83,037	48,858
1894-95	19,59,129	82,333
1895-96	31,47,832	56,933
1896-97	22,68,447	52,553
1897-98	28,17,662	21,952
1898-99	31,35,838	36,476

The indication of the beginning of a new policy, though hesitant and hazy, came during Elgin's Government. His Government was furnished by the Engineering and Iron Trades Association with a list of articles which could be locally manufactured. In their Despatch, dated 14th October, 1897 the Government of India affirmed that the list of articles of iron and steel manufactured in India, which might be purchased in India, should be "considerably extended" and that "the condition limiting such purchases to articles, the certain want of which could not be anticipated, and the delay in the supply of which might involve loss, may be dispensed with". But articles required for State Railways under construction would continue to be supplied through the India Office; and the same course would have to be followed in dealing with "the first equipment of large engineering projects other than State Railways". A list of approved firms was published which alone could tender for the supply of the articles.[1]

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[1] FD to, No. 282, October 14, 1897.
List of approved firms : Bengal Iron and Steel Co., Barakar; Burn and Co.; Jessop and Co.; John King and Co.; Parry and Co.; Ahmuty and Co. and Martin and Co. (Calcutta); Richardson and Cruddas: Cosser and Co.; G. Ghagan and Co.; McKenzie and Co. (Bombay); Oakes and Co. and Borhat and Co. (Madras); T. Crowley and Co. (Allahabad).
List of some of the articles which could be made up in India : Roof trusses of any span; cast-iron columns of any size; railway bridges of spans up to

There is no doubt that the list of articles of iron and steel work which the local engineering firms could now supply was extended. But the local industries were not satisfied with the practical result of the implementation of the new rules. In their letter to the Government of India, dated 11th April, 1899, the Engineering and Iron Trades Association, while expressing their satisfaction at the removal of the previously existing restrictions, complained of the inadequacy of the orders placed with local firms. The Government of India issued a circular letter, dated 16th June, 1899, in which it was laid down that indents should be carefully scrutinised before transmission to the India Office. This procedure was of "considerable potential value to Indian industries"; Indian firms could now compete with English firms for the supply of the requirements of the Consuming Departments.[1] Lord Curzon's Government in their Despatch, dated 24th October, 1901 made proposals for the manufacture and supply of rolling stock for the Railways by Indian firms. Lord George Hamilton sanctioned the proposals but insisted that "wheels, axles, springs and drawgear should be indented for from India Office".[2] In the Standing Order issued by the Director of Railway Construction in September, 1904, further relaxation of the rules was contemplated. The prohibition placed against the purchase in India of articles required for State Railways under construction, or the first equipment of large engineering projects was not retained in the Standing Order and the list of articles which might be purchased in India was also omitted.[3] In 1905 the Railway Board issued orders announcing that tenders for twenty-five per cent of all goods stock required for State Railways would be called for in India.[4]

Again in April, 1905, the Engineering and Iron Trades Association presented a memorial to the Government of India expressing resentment with the existing regulations and procedure. It was particularly noted that "railway bridges of small span" only could be

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80 ft.; over-bridges for railways; steam launches; horizontal and vertical steam boilers constructed under Government supervision; iron chimneys; cast-iron sockets and anchor plates for telegraph posts; looms; ploughs and agricultural implements; safes; boring tools; railways and gates of wrought and cast-iron; cast-iron lamp posts; sluice gates and frames of wrought or cast-iron; trollies; road rollers (not including steam road rollers); workshop stores when urgently required; etc.

[1] *Report of the Stores Committee*, (1906).

[2] Despatch to, No. 77, Railway, October 24, 1901. (CD—Stores, December, 1908, File No. 48).

[3] *Report of the Stores Committee*, (1906).

[4] CD—Stores, December, 1908, File No. 48.

purchased in India, and of these "only a very few are ordered in India, the rest being imported". They pleaded that "a certain portion" of the requirements of the Railway department for rolling stock should be reserved for Indian firms. Their representation received the support of the Bengal Chamber of Commerce.[1]

Lord Curzon resigned his office in August, 1905; the Tory Government fell in the General Election of 1906 and the Liberals came to power. John Morley was the new Secretary of State. Lord Minto had succeeded Lord Curzon, and his Government adopted an important resolution on February 19, 1906, in which it was admitted that "local industries must frequently lean to some extent, in the first instance, upon the support of the Government", and that "the system at present prescribed for the purchase of stores does not in practice result in the maximum amount of encouragement which the Government could legitimately give".[2] The Government took a bold step. They decided to refer the matter for examination to a Committee. The Stores Committee reviewed and sharply criticised the stores purchase policy, especially in relation to iron and steel and engineering industries.[3]

The Report admits that the development of existing industries and the practical encouragement of new enterprises for the manufacture of articles and structures of iron and steel received in the past "the special attention of the Government of India". But the policy of the Government had not met "with the full result which might have been anticipated". There was much hesitation on the part of Indian manufacturers to develop their industries, "partly as a result of the absence of that continuity in orders which would justify the laying down of expensive machinery". Officials of the Consuming Departments failed to take full advantage of the various relaxations which were made from time to time in the Stores Rules. They might have suffered "from a fear of infringement of the very precisely defined conditions under which such purchases are regulated". Sometimes a prejudice might have existed against articles of Indian manufacture.[1]

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[1] Letter from Secretary, EITA, April 12, 1905 (CD—Stores, 1906). It was pointed out that the firms could manufacture all classes of constructional work, buildings, roofing, bridges, rolling stock, trollies, dredgers, pumping machinery.

[2] Resolution of the Government of India, Department of Commerce and Industry, February 19, 1906 (CD—Stores, 1906, Pro. Vols.).

[3] The Stores Committee was appointed by the Government of India in 1906. It was composed of W. Macdonald, Superintending Engineer, PWD, President; Major J. H. S. Murray, Garrison Engineer, Military Works Services, Secunderabad; S. A. J. Keatinge, Chief Store Keeper, Oudh and Rohilkhand Railway; and M. M. S. Gubbay, I.C.S., Secretary. Officers of the three great consuming Departments were represented on the Committee. The Report runs into 61 pages. Besides the general report, there is another part of the Report in which the evidence of Indian merchants and manufacturers has been recorded. Publication of the Report was prohibited by Morley. The matter was raised by Sir Henry Cotton in British Parliament; Buchanan replied that "it would be inadvisable in the public interest to lay the Report of the Stores Committee upon the table" (February 23, 1909). This valuable Report, perhaps the best so far written on the stores purchase policy of the Government and its impact on industrial enterprise in India, will be found in the *Records of the Industries and Labour Department, Confidential, Stores* (File No. 21 of 1906). It is possible, within our limits, only to refer to such portions of this Report as are relevant to the present study. We have already referred to this Report in previous chapters.

Indian manufacturers had from time to time made representations to the Government, and in the public press, to the effect that their hopes had not been realised. They were expected to supply an article equal in quality to that obtainable from England; but the work allotted to them "has been so limited as to render it impossible for him to bring his manufactures to that pitch of excellence which has only been reached in other countries after years of practice". The evidence recorded by officers of various Departments seems to indicate that orders placed in India were largely "rush orders".[2]

It was contended that some Indian manufactures, particularly of iron and steel, were not of "*bona fide* Indian manufacture". The expression "*bona fide* Indian manufacture" had, on the whole, been correctly described by Messrs. Richardson and Cruddas as a "recognised and distinct product of any industry carried on in the country". Builders of wagons in England did not manufacture the whole of the component parts of a wagon. Indian firms likewise did not manufacture their materials, but imported them from Europe.[3]

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[1] *Report of the Stores Committee,* (1906), pp. 13, 14.

[2] *Ibid,* pp. 15, 16.
G. K. Watts, Chief Engineer, Central Provinces, stated in his evidence: "The purchase in India of locally manufactured stores is only made in an emergency, otherwise all stores are obtained through the India Office". T. J. H. Collister, Chief Engineer, GIPR, stated: "Time is the only inducement when ordering in India, otherwise we obtain everything in England". Bagely, Engineer-in-Chief, NWR, stated: "We now get everything we possibly can from England and only buy in India when forced to do from consideration of convenience or want of time".

[3] *Ibid.,* pp. 16, 17.
It seems that Indian firms could turn out iron and steel products of good quality. E. Sanders, Chief Engineer, BNR, stated in his evidence: "Since the Bengal Nagpur Railway adopted the practice of having the greater part of their structural work manufactured in India, the better class of firms have improved their plans and methods with the result that the workshop

The Stores Committee reviewed the indents sent to the Stores Department of the India Office during the year 1904-05. The value of the indents reviewed aggregated £ 3,283,969 of which £ 467,319 represented the value of the articles which could have been obtained in India of local manufacture. The following statement will show the extent to which orders which might have been placed locally, had been sent to the India Office. The statement has been taken from the *Report of the Stores Committee.*[1]

STATEMENT

Departments	Aggregate value of indents submitted £	Value of portion which could have been purchased in India. £
Public Works and Irrigation	80,365	18,324
State Railways	2,175,340	359,745
Telegraph Department	145,172	3,114
Ordnance Department	613,118	10,411
Marine Department	61,874	5,250
Military Works Services	59,344	14,335
Army Clothing Department	148,756	56,140
Total:	3,283,969	467,319

The engineering industry had made considerable progress since 1882-83 ; there were twenty-seven firms (including four firms working in Burma) engaged in the industry in 1909.[2] Messrs. Burn and

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is of excellent quality, the materials comply with the requirements specified, delays in the time of execution have become few and the price asked has been progressively reduced".

P. Hyde, Loco and Carriage Superintendent, Oudh and Rohilkhand Railway, stated: "When I was on the Eastern Bengal State Railway, I found that Indian firms turned out work equally as well as English firms. I was quite satisfied with the work after the initial difficulties had been got over."

[1] *Ibid.*, pp. 22, 23.

The following articles were obtainable of local origin: Girders 6 feet to 100 feet span ; Railway wagons and trucks ; points and crossings; wrought-iron and petty tools ; cast-iron work and castings ; Railway tickets ; Locks and small fittings ; etc.

[2] These were Government approved firms. *The Catalogue of Indian Manufacturers* published by Government in September, 1909 mentions 69 Engineering and Iron industries which produced iron and steel articles. Of these 17 were in Bengal, 11 in Bombay, 2 in Bihar, 10 in Madras, I in C.P., 11 in Punjab and Delhi, 12 in U.P., 4 in Burma, 1 in Ajmere principal centres of the engineering industry being Calcutta, Howrah, Barakar, Sakchi, Bombay, Karachi, Cawnpur, Lucknow, Aligarh, Madras and Rangoon. (CD—Stores, File No. 87, September, 1909).

Co., Messrs. Richardson and Cruddas and Messrs. Jessop & Co. could be ranked as "First Class" firms which were equipped with modern machinery and appliances.[1] The engineering works could turn out a variety of goods. It seems that they undertook the manufacture of goods for which there was a large and growing demand in the country: railway main line bridges; over bridges; suspension bridges; wagons; points and crossings; signal posts; road rollers; trollies; tanks; well curbs; sluice gates; cranes. Messrs. Burn & Co. achieved some measure of success in the manufacture of colliery plant, brick-making plant, steamers, motor launches, cargo flats, cargo boats and passenger boats, tube-wells and irrigation pumps. The engineering works also manufactured cast iron columns, cast iron pipes, sanitary appliances for municipalities, roof works, lamp posts, chimneys, bolts and nuts.[2]

The Indian firms were prepared to deal with orders of larger magnitude than they had hitherto received; and if they were assured of "a continuity of support" from Government, they could raise further capital without difficulty. Few of them were working to their full capacity; and the production of even the larger firms was at a low level.[3] In a number of cases, steps were being or had been taken to extend the workshops. Messrs. Burn & Co. stated: "Our designs for a new machine shop are completed and it will cover a space of 50,000 superficial feet". Messrs. Richardson and Cruddas had acquired 20,000 square yards of additional land in anticipation

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[1] The Stores Committee submitted a *Confidential Report* (dated June 30, 1906) in which Messrs. Burn & Co., Messrs. Richardson and Cruddas and Messrs. Jessop & Co. were put in "First Class"; Alcock Ashdown & Co. (Bombay), John King & Co. (Calcutta), The Vulcan Iron Works (Calcutta), B. K. Herman & Co. (Karachi) were the most prominent firms among the "Second Class".

[2] *Evidence of Merchants and Manufacturers* (See the Report, Vol. II).

[3] The outturn of Messrs. Burn & Co. in 1904-05:

Wrought iron and steel work	...	Approx.	12,000 tons.
Cast iron work	...	„	3,000 „
Forging work	...	„	3,000 „
Timber work	...	„	3,000 „

They employed 1,500 skilled and 3,000 unskilled workers and 75 Europeans. In their evidence before the Stores Committee Messrs. Burn & Co. stated: "At present we are not and seldom have been except for a short period working up to full capacity".

Jessop & Co. stated: "Our works are seldom or never running at their full capacity". Output of Jessop & Co. in 1904-05 was 15,000 tons (approx.). They employed 2,000 skilled and 5,000 unskilled workers.

The output of Messrs. T. Crosser & Co. was about 400 tons per month. They employed 250 skilled and 150 unskilled workers.

Richardson and Cruddas employed 1,800 to 2,000 workers.

of further increase in their workshops. Messrs. Arbuthnot & Co. who owned the Reliance Foundry at Madras stated: "We have built new shops some 6½ acres in extent. We contemplate putting down hydraulic and rivetting plant and pneumatic drilling plant and will certainly do so if Government will accord us greater patronage". Messrs. Jessop & Co. had made special provision for the construction of railway wagons.[1]

The Indian firms had in fact increased their business since 1882-83. The business of Messrs. Burn & Co. had quadrupled since 1883. The firm of Messrs. K. L. Mukherjee & Co. (the only Bengali firm, which found a place in the list of Government approved firms) stated that since 1883 workshops business had increased "tenfold or more". The volume of business of Messrs. Richardson and Cruddas had doubled since 1883. The outturn of Messrs. Sorabji Shapurji (the only Indian firm in Bombay, which was approved by the Government) had doubled since 1883. The business of Messrs. Alcock, Ashdown & Co. "increased ever since 1889".[2] A question presents itself for answer: how could the Indian firms increase their business in a period when they were constantly complaining of "inadequacy", and "lack of continuity" of Government support? It appears from the evidence recorded by the Indian firms that the market for engineering goods expanded with the expansion of local industries, principally jute, cotton, and tea.[3] The Port Trusts and Municipalities obtained a large part of their supplies from the local firms.[4] Rail ways owned by Companies were their customers, principally in bridge-work. Private demand had become a factor of considerable importance, and it seems that the firms of Bombay and Calcutta were more dependent on private demand than on Government support. The engineering firms of Madras were handicapped by the absence of large industries which required structural work. In Upper India, the engineering requirements of local bodies and private concerns were limited, and the firms depended much on Government support. Messrs. Gavin Jones and Sons (Cawnpur) stated in their evidence that about two-thirds of their business was with Government Departments, the State Railways being the largest customers. The bulk of the business of Lucknow Iron Works (which manufactured bolts, forges, gates, fish-plates, nuts, screws, tie-bars) was with the three Consuming Department.[1] We will presently see that the engineering industry was in the initial stages of development and it lagged behind the demands of Indian industries, especially in respect of tools and plant and of machinery.

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[1] *Evidence of Merchants and Manufacturers* (The Report, Vol. II). The Stores Committee was of opinion that the larger firms were in a position to undertake a larger volume of work and also "work of a heavier and more difficult class than they have hitherto attempted". The smaller firms too could undertake larger work, and "their capacity is scarcely taxed to the full". (The Report, p. 28).

[2] *Ibid.* The firm was founded in 1884.

[3] Much valuable information on the tea industry can be obtained from the Memorial submitted by the Secretary, Indian Tea Association to the Government, dated 10th March, 1902. The number of tea gardens was 302; the area of tea cultivation was estimated at 520,000 acres, representing a capital investment of £ 25,000,000 (approx.). The tea companies purchased large amounts of machinery and implements and building materials. (See FD to, May 15, 1902—Enclosures).
The number of cotton mills rose from 150 in 1896-97 to 227 in 1907-08; Jute mills from 28 in 1895-96 to 54 in 1907-08. The success of some of the Bombay firms was attributed to the extension of the cotton industry, especially in Ahmedabad. (The Report, p. 28).

[4] We have alluded to the large requirements of Port Trusts and Municipalities.

The Government of India in their Despatch, dated 16th May, 1907, endorsed the Committee's criticism of the existing rules, which, they thought, "have been shown to be inadequate". They also agreed with the Committee that "in certain classes of manufacture, the placing together of component parts obtained in finished state from other sources constitutes a clearly defined industry". They recommended that the Stores Rules should be revised in the light of the Committee's criticism.[1] John Morley in his Despatch, dated 18th October, 1907, preferred not to give his decision on the matter and refused "to take into my consideration at present the publication of the Report of your Stores Committee".[2] The Government of India remained firm. In a strongly worded Despatch, dated 26th March, 1908, Minto's Government refused to modify their views and made this significant observation: "Nor can the Government of India take into account the probable effect on English manufacturers of any action on their part which may tend to develop local industrial efforts".[3]

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[1] *Evidence of Merchants and Manufacturers,* (See The Report, Vol. II).
Messrs. Burn & Co.—Value of outturn for 1904-05: Rs. 21,00,000 (approx.). Orders of private firms represented 45.6 per cent., State Railways, 4.5 per cent., other Railways 23.6 per cent., PWD 13.5 per cent., Military Department 3.3 per cent.
Messrs. Jessop & Co.—Outturn in 1905: 15,000 tons (approx.), of which Government Departments took 3,000 tons (approx.) and Port Trusts and Municipalities 9,000 tons (approx.).
Messrs. John King & Co.—Value of turnover in 1905: Rs. 16,00,000 (approx.). Orders of Government Departments represented Rs. 1,34,000 and local bodies Rs. 4,34,000.
Messrs. K. L. Mukherjee & Co.—Total value of outturn in 1905: Rs. 1,53,480 ; Orders of Government Departments were valued at Rs. 8,961. Port Trusts and Municipalities were their principal customers.
Messrs. Sorabji Shapurji (Bombay)—Value of outturn in 1905: Rs. 5 lakhs (approx.). They did not do any work for Government Departments.
Messrs. Oakes & Co. (Madras)—Value of outturn in 1905: Rs. 1,62,700 of which Government orders represented Rs. 3,440.
Messrs. Alcock, Ashdown & Co.—Value of output in 1905: Rs. 7,05,242, of which Rs. 6,87,770 represented the value of goods supplied to Port Trusts and Corporations.
Messrs. Apcar & Co.—Value of output in 1905: Rs. 96,750. No work was taken in for Government Departments.
Lucknow Iron Works—Value of output in 1905: Rs. 1,17,000; Value of goods supplied to Government Departments amounted to Rs. 70,000. The iron works was owned by Messrs. Newal Kishore.

The redoubtable Secretary of State at last agreed that the existing rules should be relaxed and on 5th February, 1909 issued the new Rules. He made it clear, however, that the new Rules "are adopted purely as an experimental measure". It was laid down in clause 2 of the Stores Rules that all articles manufactured in India from imported articles "should, by preference, be purchased in India", subject to the following conditions: "That a substantial part of the process of manufacture of the articles purchased has been performed in India"; "That the price is as low as that at which articles of similar quality can be obtained through the India Office"; "That the materials employed are subjected to such inspection and tests as may be prescribed by the Government of India".[4] The Government of India promulgated the Rules on 14th July, 1909, along with a list of firms which could tender for iron and steel work.[5]

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[1] This Despatch is annexed to the Report.

[2] CD—Stores, 1908, Pro. Vols. With the Despatch was enclosed a Memorandum by Sir A. Rendel, Consulting Engineer. Rendel felt that the Stores Committee seemed to be aiming at "protection against the English manufacturer". He added: "but I imagine manufacturers at home have a great deal to say on the subject".

[3] Despatch to, March 26, 1908 (CD—Stores, April, 1908). They also did not accept the views of the Home Board of the BBCIR. The Home Board wrote to their Agent in India: "They think it improbable that without special protection to the new factories, steel railway wagons or other railway specialities will for many years to come be obtained locally as cheaply or of the same standard of workmanship as those which could be got out from England, ... the Board are not prepared to encourage local purchases of the character thus indicated" (April 6, 1906).

[4] CD—Stores, July, 1909.

[5] Resolution of the Government of India, Department of Commerce and Industry, July 14, 1909 (*Ibid.*).
At this stage a series of telegrams passed between the Government of India and the Secretary of State. On November 12, 1909, the Secretary of State asked the Government of India to direct officers "to defer action

An important change was made in the Stores Rules promulgated in 1909. It was clearly laid down that preference should be accorded to articles manufactured in India from imported materials. Indenting officers were also required to scrutinise the indents before transmitting them to the India Office. This clause (clause 2 of the Stores Rules of 1909) was incorporated in the Stores Rules promulgated in 1912 and in 1913. The list of Indian firms which could tender for iron and steel work was extended in 1913.[1] But some restrictions remained in force. The purchase of wheels and axles and springs of rolling stock was not permitted; railway bridges of spans up to 150 feet only could be purchased.[2]

We will now examine the general effect of these rules on local enterprise, and we immediately find ourselves in an impasse. We can no more fall back on the massive evidence of a Government appointed Stores Committee; the hundreds of indents transmitted between 1909 and 1914 cannot be reviewed; and it is impossible to find out how much of these indents could have been reserved for Indian manufacturers. We can only refer to the Annual Returns which will show the amount of expenditure on the purchase of building and engineering materials, tools and plant and machinery of Indian manufacture, and draw our conclusions.

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in regard to large purchases of plant, steel work, etc., pending the completion of the arrangements for comparison of prices and inspection". The Government of India informed him that suspension of the New Rules would expose them "to much unfavourable criticism and possible charges of breach of faith". On July 14, 1910 the Secretary of State agreed to sanction purchases of plant and steel work, but insisted that local purchase of electric power plant and lighting plant would not be permitted; the Government was to purchase electrical plant in England. (See File No. 112 of 1909, CD—Stores, March, 1911).

The list of approved firms will be found in *Appendix B*.

[1] The Stores Rules of 1913 will be found in *Appendix A*. The number of approved firms was 40; it was 14 in 1897. The PWD objected to the inclusion of TISCO in the list of approved firms on the ground that they did not manufacture "iron and steel work", but supplied the materials. On the intervention of the Commerce and Industry Department the name of the Tatas was included in the list. See Notes of Officers, CD—Stores, September, 1912, B.

[2] Despatch of the Secretary of State, May 8, 1908 (CD—Stores, December, 1908. File No. 48); also see the Resolution of the Government of India, Dept. of Commerce and Industry, October 1, 1908 (CD—Stores, 1908, Pro. Vols.).

TABLE I. ENGINEERING AND BUILDING MATERIALS

Year	Value of European stores imported in India. Rs.	Value of stores produced in in India. Rs.
1908-09	8,13,665	7,04,826
1909-10	5,48,959	4,76,507
1910-11	7,38,272	5,03,565
1911-12	7,17,068	10,07,603
1912-13	11,03,520	4,21,093
1913-14	12,47,024	14,61,150

TABLE II. TOOLS

Year	Value of European stores imported in India. Rs.	Value of stores produced in India. Rs.
1908-09	64,533	13,698
1909-10	10,113	12,462
1910-11	29,653	12,208
1911-12	24,028	7,415
1912-13	60,366	8,265
1913-14	47,535	15,145

TABLE III. MACHINERY AND PLANT

Year	Value of European stores imported in India. Rs.	Value of stores produced in India. Rs.
1908-09	6,33,655	1,81,085
1909-10	5,20,485	2,66,938
1910-11	7,76,996	4,23,257
1911-12	6,10,094	3,48,978
1912-13	10,99,369	3,76,132
1913-14	22,74,348	4,92,998

The figures quoted above fairly indicate that the relaxation of the rules did not lead to any appreciable increase in the value of the stores of Indian manufacture; the value of imported European stores remained considerable. It was only in 1913-14 that expenditure on stores produced in India showed a small increase. India was then on the eve of the War. It is not fortuitous that the Indian Engineering and Iron Trades Association kept on complaining of the inadequacy of Government orders, especially of wagons and bridgework; and the rumblings of discontent began to be louder as the engineering industry began to advance.

In their letter, dated 20th July, 1909 Messrs. Jessop and Co. complained of the inadequacy of orders for wagons; Indian firms could turn out over 2,000 wagons a year "at prices that will bear fair comparison with British manufacturers' prices".[1] The Indian Engineering and Iron Trades Association in their Memorial to the Government, dated 17th January, 1912 complained that the demand for Indian articles of iron and steel had not increased since the promulgation of the Stores Rules in 1909. They made special mention of the restrictions regarding the size of bridges that might be purchased in India. They pleaded for the removal of all such restrictions; the competence of local firms was evident from the fact that the Calcutta Port Commissioners had asked local firms to tender for the construction of the new Howrah Bridge. The engineering industry had made much progress in the manufacture of wagons, steel and iron buildings, bridges, tanks, engines, hoisting machinery and other articles. Government assistance was desired especially because there was a depression in Calcutta.[2] Again on October 12, 1912, the Association wrote to the Government complaining that "no improvement of business" had resulted from the Stores Rules of 1909; they also complained of the importation of "Spans from 40′ to 150′" from the United Kingdom. It was proposed that simultaneous tenders for such work should be called in India and England. The Government of India rejected the proposal on the ground that while it would do doubt result in an accurate comparison of prices obtaining in India and Home markets, it would make "no provision for any comparison of quality". It was also pointed out that the Secretary of State "has specifically refused to receive tenders in England from Indian firms".[1]

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[1] Letter from Messrs. Jessop and Co. July 20, 1909 (CD—Stores, File No. 69, August, 1909).

[2] Memorial of EITA, January 17, 1912 (CD—Stores, File No. 4, June, 1912). Several of the large engineering concerns were running "with half empty shops".

The following figures may be quoted from the Note of the President, Railway Board, May 20, 1912.

Statement A.

Total value of work other than rolling stock given to local firms: 1907—Rs. 8,44,835; 1908—Rs. 21,43,317; 1909—Rs. 14,18,987; 1910—Rs. 17,63,112.

Statement B.

Total number of wagons (excluding wheels, axles, springs etc. which were obtained from England) ordered in India between 1901 and 1912—6764; approximate value of the orders—Rs. 1,42,84,577. Approximate value of orders for wagons placed in England for these eleven years—Rs. 5,53,16,060; number of wagons: 16,685 (exclusive of 4,350 "special wagons").

When the Government was receiving memorials from the Indian manufacturers, they found the "Home Manufacturers" wary. The *Railway Gazette* published a trenchant article on "Indian Railway affairs" in which much concern was expressed for the Indian taxpayers: "The Government of India would not be dealing fairly with the taxpayers if, only with the idea of patronising a body of clamorous agitators, they paid higher prices for locally manufactured goods in preference to articles of British manufacture obtained at a lower cost".[2] Sir A. Rendel anticipated this attitude of the "Home Manufacturers" in 1908. The attitude represented by the Home Board of the Bombay, Baroda and Central Indian Railway to the question of assisting local enterprise has been alluded to. The "Home Manufacturers" were evidently very reluctant to lose the Indian market.

It seems that the Government of India yielded to the pressure of the "Home Manufacturers". They contended that much had been done to draw the attention of indenting officers to the articles produced in India; but the general consensus of opinion was that "Indian manufactures are not up to specification and the safe course was to indent on the India Office".[3] At a meeting of the Association held on October 28, 1914, Clark, member of the Department of Commerce and Industry, emphasised that there could be no question of "subsidising local industries at the expense of the State".[1] The request of the Association to instruct officers to call for tenders from Indian firms before "deciding whether to place their orders in England or in India" was rejected by the Government of India.[2] It seems that indents were not closely scrutinised before they were sent to the India Office. The Association noted in their evidence before the Indian Industrial Commission that the long list of indents for 1914 showed that "a considerable amount of work could have been given out in the country".[3]

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[1] Letter of R. E. Enthoven, Secretary to the Government of India, Commerce and Industry Department, January 15, 1913. CD—Stores, File No. 4 of 1912, January, 1913. T. R. Wyne, President, Railway Board, in his Note (October 7, 1912) pointed out that large spans required first class workmanship, designs for which were made in London by Consulting Engineers of the India Office.

[2] *Railway Gazette* (London), November 22, 1912 (CD—Stores, File No. 2, January, 1913). It further wrote : "The more we get the more we want. The truth of this adage cannot better be illustrated than by the attitude taken by an association of firms of manufacturing engineers at or near Calcutta to coerce the Government to place their orders with them".

[3] Despatch to, August 28, 1913 (CD—Stores, 1913, Pro. Vols.). In this Despatch the Government of India drew the attention of the Secretary of State to the importance of encouraging "the best English firms" to open branches in India, so that the standard of Indian manufactures might be raised.

It is undeniable that the engineering industry had made much progress since 1882-83, and it seems that this progress was made despite the "inadequacy" of Government support. The capital sunk in the industry in 1912 exceeded £ 3,500,000; the number of workers employed was about 35,000.[4] The general practice was to employ skilled European foremen to train Indian labour; Indian apprentices generally developed into skilled workmen.[5] The engineering industry was developing but slowly; it failed to keep pace with the growing demands of Indian industries. The very large value of the imports of machinery, boilers, prime-movers and other articles clearly indi-

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[1] Proceedings of the special meeting fo the EITA, October 28, 1914 (CD—Stores, File No. 66 of 1914). Representatives of the Association complained that "nothing like a fair share of the wagons required by the State Railways was given out in India" ; the cry in England was that "all orders that could possibly be given out, should be given".

[2] Letter from Under Secretary, Government of India, Commerce and Industry Department, September 7, 1914. (CD—Stores, File No. 33, September, 1914).

[3] Minutes of Evidence, Vol. II, *Report of the Indian Industrial Commission* (1916-18), pp. 945-46. The Association urged that a department charged with the special duty of scrutinising the indents before they were sent to the India Office should be set up. Messrs. Richardson and Cruddas in their evidence made particular mention of the stores of the Sara Bridge over the Ganges, orders of which flowed "along the well-worn channel to benefit the industrial fields of other countries, including even Germany". (Minutes of Evidence, Vol. IV, p. 76). The following figures taken from the Accounts of the Home Treasury will show the heavy expenditure (freight included) on the stores for Sara Bridge :

Year	£
1910-11	77,663
1911-12	118,506
1912-13	192,228
1913-14	288,130

[4] Letter of EITA, October 12, 1912 (CD—Stores, 1913, Pro. Vols.).

[5] Minutes of Evidence, Vol. IV, *Report of the Indian Industrial Commission* (1916-18), p. 77.

cated that a vast field for expansion had opened up.[1] But the engineering industry was not in a position to supply India's needs. India remained a market of foreign goods. As early as 1906 (when India had just entered the phase of the *Swadeshi*) D. E. Wacha drew the attention of his countrymen to this reality: "You have now in the country as many as two hundred factories for the manufacture of cotton goods; but will any one inform me that even one of these concerns can boast of a good boiler or an engine, which has been completely made in India"?[2] It seems that Indian entrepreneurs did not wake up to this reality. Foreign capital dominated the industry; and even so the pace of development was slow. This acted as a brake on India's industrial advance; it is well-known that the development of Indian steel manufacturing industry would largely depend on the existence of a large engineering and structural industry to absorb its manufactures. Iron and steel industry, engineering industry and coal mining are "interdependent in development".

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[1] See the *Report of the Indian Industrial Commission*, (1916-18), p. 50.

IMPORTS OF MACHINERY
(1913-14)

Articles	Value Rs.	Articles	Value Rs.
Prime movers	83,03,895	Sewing machine and spares	40,70,055
Electrical Machinery	51,79,440	Sugar Machinery	4,67,325
Agricultural "	2,65,335	Tea Machinery	21,33,570
Boilers	35,54,205	*Textile Machinery* :	
Metal-working Machines	1,45,965	Cotton	1,78,75,425
Oil crushing & refining plant	3,21,870	Jute	1,45,70,235
Paper Mill plant	3,48,975	Others	3,53,820
Rice & Flour Mills	15,99,180	Misc. items	1,33,11,180

[2] Speech of D. E. Wacha at the Fergusson College (Bombay), March 31, 1906 (See *Bengali*, April 7, 1906).
The Indian Industrial Commission (1916-18) also noted : "The imports of boilers and prime-movers are due to the absence in India of a complete system of engineering industries based on the large-scale manufacture of iron and steel". (p. 50).

CHAPTER VI

STATE ENTERPRISE

THE Indian Government endeavoured to pursue a *laissez-faire* policy in India; *laissez-faire* was the policy of the "Home Government". Interference by the State with industry was deemed to be a hindrance to efficient production. Freedom for enterprise was regarded as an ideal, and state control pernicious; the business of the Government was to preserve law and order. It seems, however, that *laissez-faire* was a dogma rather than a fact; it was a dogma which very often conflicted with reality. The Indian Government could not ignore reality, and could not, therefore, consistently pursue a *laissez-faire* policy. The Government had to participate, in varying degrees, in a variety of undertakings. Government action was found to be necessary to help and accelerate development. We will presently see that there was considerable public expenditure on the construction and extension of the railways, on docks, ports and harbours (this has been alluded to in the preceding chapter). The State avoided, sometimes scrupulously, any association with the productive process; yet it was forced to participate in production and had to be engaged in the manufacture of iron, and steel, and in the working of coal mines. The Government founded railway workshops, canal workshops, postal workshops, harness and saddlery factories, ordnance factories, and there emerged what may be called a "public sector". Public investment in the state enterprises was on a small scale; nevertheless, the association of the state with the productive process was to reveal the importance and necessity of expanding Government activity to accelerate development.

The Government had, therefore, to depart from their cherished ideal and adjust their policy to changing reality. *Laissez-faire* proved to be an elusive ideal. They were, however, consistently opposed, during the period under discussion, to a policy of protection. Indian public opinion was almost unanimously in favour of a policy of protection. Indian public opinion was ignored. It seems that the opposition of the "Home Manufacturers" was a factor of considerable importance, and this could never be ignored.[1]

RAILWAYS

Before we take up the State enterprises, we will deal briefly with the rôle of the state in railway building in India. It will be beyond the scope of our study to deal with the history of the development of the railways; we will only endeavour to examine how far railway building marked a departure from the *laissez-faire* policy. We will presently see that railway building led the Government to tread the path of participation in the productive process. In the preceding chapters we have alluded to the impact of railway building on the iron and steel industry, and on the engineering industry.

During Lord Dalhousie's administration railway construction in India received "the first decisive stimulus". It seems that political necessity and commercial advantage supplied the impulse. In his famous Railway Minute, dated 20th April, 1853, Lord Dalhousie pointed out the commercial advantages of railways: "England is calling aloud for the cotton which India does already produce in some degree and would produce sufficient in quality, and plentiful in quantity, if only there were provided the fitting means of conveyance for it from distant plains to the several ports adopted for its shipment".[2] In his Minute of 1856, Lord Dalhousie emphasised "the political and military advantages which the Government of the country derives from the possession of such an engine of power".[3] Railway building began to make rapid progress during the period of Crown Government; the "Home Government" seemed to be particularly keen about it. In his Railway Despatch, dated 10th October, 1861, the Secretary of State wrote that the railway works which were under construction should not be restricted.[1] Again on May 9, 1863, Wood wanted the Government of India to proceed with the construction of public works "as rapidly as circumstances will allow", and especially with "works in any way tending to facilitate the production and transit of cotton".[2] On July 16, 1863, he sought to explain the expediency of proceeding as rapidly as possible with "works of irrigation, cotton roads, or other works calculated to aid the commercial industry of the country".[3]

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[1] We have alluded to the nature and occasion of the "Home Manufacturers'" opposition in previous chapters. Lord Curzon's Government emphasised this point in 1903: "If Indian Industries are in need of, or should now desire a measure of protection, protective measures would necessarily seriously affect imports from the United Kingdom ... The merchants of Lancashire or Dundee, to mention two interests alone, would not acquiesce in such a course". (FD to, No. 324, October 22, 1903, Pro. Vols.).

[2] M. N. Das, *Studies in the Economic and Social Development of Modern India,* 1848-56, p. 72. Dr. Das states that Sir Charles Wood came forward to support Dalhousie's railway programme in order to appease "a large and powerful party" in England. Several members of the British Parliament were the sponsors of the railway companies, and a large number of British capitalists were shareholders of the companies (pp. 81-82).

[3] Das, *Op. Cit.,* p. 415, Appendix B. The author has quoted the Minute.

The construction of railways was undertaken by some joint-stock companies with an English domicile;[4] and there was considerable export of British capital to India to be invested in railways.[5] The contracts made with the companies provided that the Government would assist the companies with free grants of land and guarantee interest at rates varying between 4½ and 5 per cent on the capital outlay. Any profits over the guarnateed rate of interest were to be shared with the Government. Government reserved the right of purchase of the lines on the expiry of the contracts. The management remained with the companies, though the Government instituted control over the management and working of the railways.[6]

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[1] FD from, No. 22, February 2, 1861 (Pro. Vols.).

[2] FD from, No. 81, May, 1863-B. Sir Charles wood recommended the provision for "a considerably increased expenditure" for the purpose in the year 1863-64. As early as 1846 the Cotton Commission proposed the improvement of the port of Bombay and the opening up of the Deccan by railways. In 1861 Canning ordered the compilation of "hand books" on cotton for the use of Government officers. With the onset of the American Civil War in 1861 the attention of England "was centred on India and its cotton" (W. Walton, *Short History of Cotton, its Culture, Trade and Manufacture*, pp. 14, 64. Walton worked as the Superintendent of Government cotton gin factories).

[3] FD from, No. 115, July 16, 1863-B.

[4] The eight companies were (1) The East Indian, (2) Great Indian Peninsula, (3) Madras, (4) Bombay, Baroda and Central India, (5) East Bengal, (6) Oudh and Rohilkhand, (7) Sind, Punjab and Delhi, and (8) Great Southern of India Railway Companies (C. W. E. Cotton, *Op. Cit.* p. 8). The companies had their Boards of Directors in England. The Directors were mostly ex-officials of the Government of India. The Home Board maintained a close scrutiny and control over railway policy. Amba Prasad, *Indian Railways*, p. 82.

[5] In fact the railways in India were financed almost entirely by British capital. Mr. Dobb has emphasised "the unique strategic importance" of railway building which served for Britain "the double function of providing a profitable outlet for capital and also stimulating the export of British capital goods". M. Dobb, *Studies in the Development of Capitalism*, pp. 296-97. It may be said that the railways were also of unique importance for India's development. The quality of the railway is indeed unique: "it blesseth him that gives and him that takes".

[6] The State reserved the right to take over any line after 25 or 50 years. The Government exercised control over the railways through the medium

The construction of railways in India proved very expensive.[1] The "guarantee system" imposed an enormous financial burden on the State ; the earnings from the railways fell short of the guaranteed rate, and the Government had to make good the deficits. The guaranteed interest on railways, which India had to pay in sterling, stood at £4,96,039 in 1856-57 ; it rose to £3,894,383 in 1868-69.[2] The "guarantee system" came under severe criticism, and it was decided to follow a policy of direct Government construction. Lord Lawrence, in his famous minute dated January 9, 1869, built up a case for construction by the State. The company administration had proved to be extravagant. Under the guarantee system the whole profits went to the foreign Companies, and the whole loss to the Government. The State could borrow money, and construct and work railways economically. Lord Lawrence argued: "Is it reasonable or consistent with the true interests of India to continue a system under which the revenues of India have to bear the whole risk or loss and can derive no direct benefit from railway construction, in preference to one under which with a risk certainly no greater and probably much reduced, the whole of the direct profits can be added to the public revenues and made available for reducing taxation or preventing the imposition of new burdens"?[3] It was the period of Gladstone's first Ministry which "was the first in English history that can be called distinctively liberal instead of Whig".[4] The Duke of Argyll, the new Secretary of State, sanctioned the proposals of the Government of India. The construction of State Railways was undertaken with borrowed capital.[5] The annual expenditure on

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of a Consulting Engineer for Railways in each of the principal provinces ; the general supervision was carried out in the Public Works Secretariat of the Government of India ; the Secretariat was established in 1854. W. S. Meyer, *Op. Cit.* p. 2.

[1] Jenks states that instead of £8,000 per mile for which Dalhousie had planned to constuct railways, those in operation by 1868 "had averaged £18,000, without recokoning dividends advanced upon the guarantee, which were charges upon the future possible earnings of the roads" L. H. Jenks, *The Migration of British Capital,* p. 222.

[2] FD from, No. 420, December 2, 1869-B.
The guaranteed interest was paid in England, but the net traffic receipts were received in India.

[3] Minute of Lord Lawrence, January 9, 1869; See Sanyal, *Indian Railways,* pp. 73-74; Amba Prasad, *Op. Cit.,* p. 54; Jagtiani, *The Rôle of the State in the Provision of Railways,* pp. 110-11.

[4] G. M. Trevelyan, *A Shortened History of England,* p. 513.

[5] FD from, No. 338, September 30, 1869-B. The Government of India informed the Secretary of State that it would not be "practicable to raise in India .... any portion of the funds at present required for the construction of State Railways".

State railways and canals rose to £4,500,000 in 1873-74, and the expenditure was not likely to decrease "in each of the four years from 1874-75 to 1877-78".[1] Lord Salisbury in his Despatch, dated 23rd July, 1874, laid down that all loans for Public Works should be raised in India.[2] The Secretary of State was "deeply sensible" of the importance of "the developmnt of the material resources of India by well-constructed Public Works", but he did not consider it desirable" to appropriate annually a larger sum than £2,500,000 to Public Works".[3] The exchange problem had become a "continually growing evil" from 1877-78.[4] The Famine Commission (1880) noted that 5,000 miles of railway represented "the minimum extent of lines still necessary".[5] Under these circumstances the Government decided to return to the policy of inviting private companies to undertake railway construction ; the Secretary of State recommended that "private capital should be raised for the construction of railways in India on the exclusive security of the success of the undertaking".[6] The total outlay on State railways up to the end of 1880-81 was about £ 26,689,000, and the miles of railways constructed by the State totalled 3297.[7]

The construction of railways by the State was not, however, given up. The State incurred considerable expenditure on the "strategic lines" on the North-West Frontier, whose construction was dictated by "the military and political necessities".[8] The exchange problem had been pressing on the Government ; the Committee appointed by the House of Commons in 1889 to examine the Home Charges recommended "greatest caution" in regard to the increase of the sterling liabilities of the Government of India. The Committee laid down that money required for the new railways and irrigation works "must be obtained in India".[1] It appears that railway building made much progress between 1881 and 1900; the mileage for 1881 was 9,891, in 1900 24,760 miles were open for traffic. The total capital outlay down to the end of 1901 was £ 226,773,200.[2] It is noteworthy that the Government had to pay for stores for State railways, and such expenditure rose considerably towards the close of the century.[3] Lord Curzon's Government examined the question of increasing expenditure on railways, and came to the conclusion that "by far the greater part of expenditure" on railways "must be undertaken by, or on the responsibility of, the Government", since "private enterprise, has with rare exceptions, so far failed to come forward on any considerable scale, unless it has been aided by Government assistance in some form, usually a firm guarantee". The Government affirmed that the standard of capital expenditure could not be reduced "without retarding the development of the country".[4] Between 1910 and 1914-15 the total capital outlay on railways increased by aobut 79 crores; gross earnings had risen from 51 to 63 crores.[5] It was the period of the construction of the Southern Shan State Railways in Burma and of the Sara Bridge.

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[1] FD from (confidential), No. 135, March 5, 1874.

[2] FD from, No. 387, July 23, 1874-B.

[3] FD from, No. 444, November 13, 1879-B.

[4] See Chapter V.

[5] FD from, No. 365, December 8, 1881, Pro. Vols.

[6] FD from, No. 170, June 8, 1882-B. The Despatch No. 365, December 8, 1881, has been quoted in this despatch. The Secretary of State wanted the Government of India to "bear constantly in mind" the importance of "ensuring their construction by private capital, either local or European". FD from, No. 1, January 6, 1882-B. Under the "new guarantee system" the railways were declared to be the property of the State, and the rate of interest was usually 3½ per cent. Amba Prasad, *Op. Cit.*, pp. 59-60; also see *Imperial Gazetteer of India*, Vol. IV, p. 178.

[7] Strachey, Sir John and Lt. G. R. Strachey. *The Finances and Public Works in India*, p. 90; Amba Prasad, *Op. Cit.*, p. 55.

[8] FD from, No. 98, April 12, 1888, Pro. Vols. Lord Cross noted that the exchange problem was "a cause of the greatest anxiety to me", and "great caution" was necessary in adding to India's sterling liabilities.

It has been noted that the Government reserved the right of purchase of the lines from the guaranteed companies, and as the twenty-five year contracts began to fall in, the Government purchased the lines.[6] The following table will show that the bulk of the railways had become the property of the State in the first decade of the twentieth century.

S.C.E.R.T., West Bengal
Library
Calcutta
25/3, B.C. Road

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[1] FD from, No. 144, July 4, 1889, Pro. Vols.

[2] R. C. Dutt, *The Economic History of India in the Victorian Age*, pp. 548-49.

[3] See Chapter II.

[4] FD to, No. 62, February 9, 1905. The railways had begun to be remunerative from 1900.

[5] *Summary of the Administration of Lord Hardinge* (1916), p. 47.

[6] The following railways were acquired by the State: East India Railway in 1880; East Bengal in 1884; Sind, Punjab and Delhi Company's lines in 1885-86; Oudh and Rohilkhand Railway in 1886; South Indian Railway in 1890; Great Indian Peninsula Railway in 1900 (V. Anstey, *Op. Cit.*, p. 133).

STATE LINES[1]

Year	Miles of railway lines open for traffic
1894	15,370
1895	15,753
1896	16,426
1897	16,698
1898	17,434
1899	18,130
1900	18,917
1901	19,286
1902	19,633
1903	20,270

In 1903 26,851 miles of railway lines were open for traffic, of which 20,270 were State-owned. In 1906-07 the total number of miles of railway lines open for traffic was about 29,500, of which 22,100 were State-owned.[2] In 1913-14, out of 34,656 miles of railways, 25,911 were State-owned.[3] It is evident that the Government could not pursue the *laissez-faire* policy. They undertook considerable expenditure in railway building. It seems that the needs of the "commercial penetration" of India largely determined Government policy. But this should not hide the unique character of the railways in the context of India's development.

IRON WORKS

We will now refer to a new development of the industrial policy-association of the State with production. This policy was forced on the Indian Government by the invisible hand of reality. It seems that the possibility and the necessity of developing the iron resources of India could not be ignored when railways were being built and extended. It should be emphasised, however, that the policy pursued was one of trial of State undertakings; it did not go beyond that. India's policy stood in sharp contrast with the policy which Japan pursued in the Meiji era.[1] Public investment in these and other industrial undertakings was on a small scale, and whenever the necessity of increased public investment became imperative, the State was extremely cautious.

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[1] PPHC, 94, 1905. *Statistical Abstract.*

[2] Of the State lines some 6,200 were managed by direct State agency (the railways being North-Western Railway, Oudh and Rohilkhand Railway and Eastern Bengal State Railway); about 15,900 were State lines worked by companies; about 3,500 belonged to companies assisted by Government; the mileage of railways belonging to Native States was about 3,500; minor railway lines owned by District Boards covered about 400 miles. In 1905 some administrative changes were introduced. It was found that the Public Works Department could not cope with the increasing burden of railway administration; a Railway Board of three members was constituted; the functions of the Railway Board included the preparation of the annual railway programme of expenditure, construction of new lines by State agency, carrying out of new works on open lines, general supervision over the working and expenditure of Companies lines. (W. S. Meyer, *Op. Cit.*, pp. 56-57, 91-92.)

[3] D. R. Gadgil, *Op. Cit.*, p. 123.

The Burwai Iron Works were started by Cal. Keating, with the sanction of the Government, in Central India in the Narbada Valley in 1860-61. A blast furnace, rolling mills, charcoal ovens were erected; the Works were put in charge of Mitander, an engineer, who was brought from Sweden in 1861. In the Budget for 1863-64, a grant of Rs. 50,000 was provided for the Works, in addition to the previous expenditure of Rs. 50,823.[2] Trevelyan in his minute, dated 13th June, 1863 proposed that the sum of Rs. 50,000 shoud be expended on "Cotton Roads or Irrigation Works", and that the Iron Works should be handed over to any private company, or closed if no such company was forthcoming.[3] Trevelyan's minute set out the objective of Government Policy, to develop India as a market for British iron and steel goods, with explicit clearness: "It is a misdirection of the resources of India to enter into competition with England in this branch of Industry .... By setting up Government Iron Works we are competing, at the Public expense, against the English Iron Trade and the English Mercantile Community .... If the Burwai or any other Iron Works in India are profiitable, there is no want of private enterprise and unemployed capital to undertake them".[4] The Governor-General, Elgin and Kincardine, in his minute, dated 22nd July, 1863, did not agree that it was a "misdirection of the resources of India" to take measures for the production of iron for the Indian market. Large amounts of British capital had been invested in Indian Railways and other works which "depend for their efficiency and productiveness on the supply of iron". There were in India "numerous employees" who were acquainted with the manufacture of iron. These factors afforded "a reasonable security" for the local iron industry.[1]

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[1] In 1896 the Government of Japan decided to establish an iron and steel industry; in 1901 the Yawata Iron Works, a State-owned concern, began production. Private enterprise later entered the field. G. C. Allen, *A Short Economic History of Modern Japan*, 1867-1937, pp. 73-74.

[2] CD—Industries, August, 1863-B.

[3] Minute by Sir C. E. Trevelyan, June 13, 1863 (*Ibid*). Trevelyan referred to the failure of the Porto Novo and Kumaon Iron Works in spite of "much fostering care" on the part of the Government. Trevelyan was the Finance Member from 1863 to 1865.

[4] *Ibid*. Trevelyan was supported by W. Grey who expressed the opinion that the Government "should not engage in undertakings of a commercial nature" which should be left to private enterprise. (Minute, dated June 15, 1863).

In August, 1863 ,the Government decided "to get rid of the concern". It was found to be impossible to obtain furnace-men in India and costly to import European skilled workmen. More capital expenditure was needed, since the Iron Works "can never be economically conducted so long as there is only one blast furnace".[2] The Government had spent about 2½ lakhs of rupees and did not want to incur more expenditure.[3] On August 17, 1863, the Government of India notified that they would receive "offers from capitalists for the sale or lease of the works."[4]

The Government of India made another trial of State undertaking with the Kumaon Iron Works. In 1855-56 the Works were opened in the hills and in the "bhabar" area under the management of Sowerby.[5] In 1858 the Government decided to withdraw and Messrs. Davies and Co. obtained a lease of the Government premises. The Government Works at Dechauri in the "bhabar" were still in operation. When Messrs. Drummond and Co. proposed to take over these Works, the Government agreed to dispose of the Dechauri Works. In November, 1861, the two companies, Davies and Co. and Drummond and Co., were amalgamated and the new Company was called the North of India Kumaon Iron Works Company, Limited, with which the Government entered into a contract. According to the terms of the contract the Company agreed to pay royalty at eight annas per ton on all ore raised and one rupee on every ton of iron manufactured; to pay in instalments for the value of the buildings the sum of Rs. 83,585; to manufacture annually 2,500 tons of iron.[1]

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[1] Minute of the Governor-General, 22nd July, 1863 (CD—Industries, August, 1863). His idea was "to put it into such a condition as would enable the Government to dispose of it advantageously". H. S. Maine was in favour of "experimental iron works at Government expense, as a preface and preliminary to private enterprise".

[2] *Ibid.*

[3] M. G. Ranade, *Iron Industry—Pioneer Attempts*, CD—Coal and Iron, Dec., 1892, No. 5-6. This paper was read at the Industrial Conference held at Poona in 1892.

[4] CD—Industries, August, 1863. The Government could find no purchaser of the Works for only £ 5,000 (Ranade, *Op. Cit.*). The Iron Works were turned over to the Maharaja of Indore; the Works were found to be closed in 1883. CD—Coal and Iron, February, 1884, No. 8-24.

[5] Note by F. W. Peile on Kumaon Iron Works, CD—Coal and Iron, March, 1885-B.

It seems that the Company could not overcome the initial difficulties of iron manufacture in India. They hoped for the construction of a railway to their Works, for which they would supply stores and which would also carry their goods to the market. These hopes were not fulfilled. The Government of India took an unusually long time to issue the license-deed, which was, in fact, issued in 1864, when the Company had suspended operations. They felt with some justification that they could not raise additional capital because of "the neglect or failure of the Government to produce the license-deed."[2] The Company in their moribund state made several appeals to the Secretary of State "for refund of their capital", so that they could continue their operations "in the interests of the country". The Secretary of State rejected the proposal and further wrote that the Company "should make way for other parties".[3]

Again it occurred to be Government to operate the Kumaon Iron Works, and in 1876 the North-West Government took a three years' lease of the Works. Success did not attend this experiment and the Works were returned to the Company after three years.[4] The Company, however, had become defunct, and the Government took possession of the Iron Works in September, 1882.[5] The Government, however, decided to dispose of the Works and invited proposals from "substantial firms or associations for utilising the works for the manufacture of iron or steel."[6]

In 1883 the Government of India received a proposal from the Government of North-Western Provinces that Ritter Von Schwarz be deputed to examine the Works and advise "whether they might be profitably worked now that the construction of the Barilli-Naini

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[1] *Ibid.* also see Ranade, *Op. Cit.*

[2] *Ibid.* Ranade had particularly noted this failure of the Government, as a result of which the Company "was unable to raise capital". Ranade, *Op. Cit.*

[3] *Ibid.* The Despatch was issued in February, 1871.

[4] *Ibid.*

[5] Notice was given to the Company on May 31, 1882, that "in consequence of breaches of agreement" the contract between the Government, North-Western Provinces, and the Company terminated. (CD—Coal and Iron, March 1885).

[6] *Ibid.*

Tal Railway will so greatly facilitate communication with that neighbourhood".[1] In his Report on the Kumaon Iron Works, dated October 2, 1883, Ritter Von Schwarz noted that the iron was "of fairly good quality", suitable for making pipes, sleepers, railings, etc. The blast furnace at Dechauri was "well built". The chief difficulty was "the limited supply of vegetable fuel". Nevertheless, owing to the opening of the Rohilkhand and Kumaon Railways and the high freight on iron goods prevailing in India, the Kumaon Iron Works could hope for "a profitable sale" of pig iron in the neighbouring towns of Allahabad, Cawnpur, Lucknow, Agra, Gwalior, Delhi and Bareilly.[2] No action was taken on this Report, and the Government waited to receive offers from private firms for the purchase of the Works.

We will now take up the history of the Barakar Iron Works which was worked by the Government of India as a State enterprise between 1882 and 1889. The Bengal Iron Works Company failed in 1879. The Government of India strongly felt that "the re-establishment of iron indusrty in India" would bring "the most important advantages to both the State and the public".[3] On May 24, 1881, they sought the sanction of the Secretary of State for the purchase of the Barakar Iron Works.[4] It seems that the Secretary of State was not favourably disposed to the idea of participation by the State in industrial undertakings.[5] On August 16, 1881, he gave his sanction to the proposal "in deference to your urgent wish".[6] On August 25,

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[1] Letter from F. W. Peile, January 10, 1883 (CD—Coal and Iron, March, 1885).

[2] *Report on the Kumaon Iron Works* by Ritter Von Schwarz, CD—Coal and Iron, January, 1884, Nos. 3-9.

[3] See *Note on the Bengal Iron Works,* by T. C. Hope. This note has been referred to in Chapter IV. Colonel F. S. Stanton of PWD, Bengal, remarked that Hope "has omitted one very important point, namely, the opposition of English iron masters"; "the Indian iron trade is too valuable to them not to ensure their strenuous opposition to any arrangements by which India will supply herself". May 2, 1881.

[4] Telegram from the Government of India to the Secretary of State, May 24, 1881 (CD—Accounts and Finance, April, 1882-B).

[5] A series of telegrams passed between the Government of India and the Secretary of State on the purchase of the Barakar Iron Works, between May 1881 and August, 1881. On June 23, 1881, the Secretary of State wrote of his difficulty "to obtain assent of Council". On June 25, the Government of India intimated that they considered the experiment "well worth expenditure of 3 or 4 lakhs". On June 28, the Secretary of State asked for "fuller statement". On July 1, the Government of India sent a despatch. On August 9, they requested "early sanction for purchase". On August 16, the Secretary of State sent the following telegram: "In deference to your urgent wish, matter left to your discretion". (CD—Accounts and Finance, April, 1882-B).

[6] *Ibid.*

1881, the Secretary of State in his despatch wrote that it was "inexpedient" for the Government to enter into industrial enterprise.[1]

On April 13, 1882, the Barakar Iron Works were purchased for Rs. 4,30,761 and an additional sum of Rs. 16,442 were spent for the purchase of stores belonging to the Bengal Iron Works Company. Lord Ripon's Government in their despatch, dated 4th August, 1882, emphasised the importance of establishing iron works in the Raniganj district "with the least possible delay", in view of "a large and daily increasing demand" for cast iron for the consumption of the railways, and for water-works, railings, gates, and also for rolled girders for roofs of houses and bridges.[2] The Iron Works were put under the charge of Ritter Von Schwarz; and seventy skilled workers were brought from Europe.[3]

The Barakar Works were conducted by the Government of India during the first portion of the year 1883, but from July, 1883, the Government of Bengal began to run it and expended till December 31 a sum of Rs. 1,77,905.[4] On January 29, 1884, the Government of India sought the sanction of the Secretary of State for "some small capital expenditure", which was of urgent necessity in order to carry on the work of the concern at a profit.[5] The Secretary of State strongly expressed his opinion against increasing the liabilities of the Government and was prepared to sanction "such further moderate capital expenditure" which was "absolutely necessary" for the working of the concern.[6]

Under the conditions laid down by the Secretary of State it was impossible for the new Iron Works to attempt large-scale production. It seems, however, that the Iron Works achieved some measure of success in the production of pig iron and iron castings, the price charged for the castings was low and the work was of high standard.[1] This induced the collieries of the Barakar district to send their orders to the Government Works.[2] The limited success achieved by the Iron Works was viewed with alarm by Messrs. Jessop and Co., who wrote a long letter on November 11, 1885, complaining of the competition of the Government Works with private enterprise.[3] The sale of pig iron rose from Rs. 1,100 in 1883-84 to Rs. 79,151 in 1884-85 and that of pipes and miscellaneous castings from Rs. 6,000 to one lakh.[4] On March 31, 1884, there was a profit amounting to Rs. 44,897 and on March 31, 1885, to Rs. 1,38,328.[5] The reduction of cost was effected "by the substitution of native for European labour".[6] In his Report, dated January 1, 1888, Schwarz suggested that the system of making coke should be improved and two blast furnaces "should be worked at the same time, instead of one only", in order to reduce the cost of production.[7] In January, 1889, Messrs. Jessop and Co., Messrs. Burn and Co., Messrs. John King and Co., Messrs. Morrison, Dewar and Co. petitioned the Government of India requesting that the Barakar Works "should confine itself to the production of pig iron and cast iron sleepers for railways".[8]

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[1] *Ibid.* The Secretary of State informed the Government of India that "the objections entertained to your proposals were withdrawn with considerable reluctance".

[2] FD to, No. 237, August 4, 1882 (Pro. Vols.).

[3] Ritter Von Schwarz was a German metallurgist; he was chief engineer for three years of the Iron Works at Oberbilk. His observations on the conditions of success for Iron Works in India may be of interest: "...the production must be driven to a maximum, so that the expenditure on management, interest of capital, etc. which are exceptionally high in India, should be as much as possible distributed over a high production" (CD—Accounts and Finance, April, 1882-B). Schwarz produced a valuable report on Chanda iron deposits which attracted the attention of J. N. Tata in 1882. For the report see CD—Coal and Iron, December, 1882, No. 6-8-B.

[4] CD—Coal and Iron, February, 1884-B. The manufactures of the Iron Works were valued at Rs. 2,06,186 in 1883 and there was a net profit of Rs. 2,828.

[5] Despatch from the Government of India, January 29, 1884 (CD—Coal and Iron, February, 1884-B).

[6] Despatch from the Secretary of State March 27, 1884, (CD—Coal and Iron, May, 7884-B).

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[1] The Iron Works had undertaken the manufacture of cast-iron rail chairs; cast-iron pistons; cast-iron buckets; cast-iron chest, etc.—List supplied by R. Schwarz. CD—Coal and Iron, March, 1886-B.

[2] The following firms sent their orders to the Iron Works—New Beerbhoom Coal Co; Apcar and Co; Barakar Coal Co; Equitable Coal Co; Sibkristodaw and Co. (*Ibid*).

[3] Letter from Messrs. Jessop and Co., November 11, 1885. The Government of India replied that the Iron Works could not "refuse to execute orders" sent by the collieries (CD—Coal and Iron, March, 1886-B). Messrs. Jessop and Co. again wrote to the Government of India on March 17, 1886, and made an interesting admission: the Government Works could supply the castings "at rates lower than private firms could afford to charge". Messrs. Jessop and Co. had been in the engineering trade "for nearly a century". (CD—Coal and Iron, April, 1886-B).

[4] CD—Coal and Iron, September, 1886-B.

[5] *Ibid*.

[6] Note of Neill, Superintendent of Works, January 5, 1885. Neill wrote that iron turned out by Barakar Iron Works was of good quality. He recommended that the Works should continue "to be conducted by Government until native workmen have been trained in the process of manufacture of wrought iron and steel" (CD—Coal and Iron, February, 1888-B).

[7] Report of Schwarz, January 1, 1888 (*Ibid*).

[8] CD—Coal and Iron, January, 1889-B.

The Government of India had no intention of permanently retaining the Iron Works, nor did they propose to part with the Works to any Company which was not "in command of a capital of from 40 to 50 lakhs of rupees", and which did not contemplate the manufacture of wrought iron and steel and castings.[1] The Secretary of State was anxious to take the first chance to hand it over to private enterprise. In August, 1889 he made it over to the Bengal Iron and Steel Company.[2] The property of the Iron Works consisted of about 1,500 acres of land, with large deposits of iron ore and coal, two blast furnaces, a foundry and buildings. It was a going concern; the annual output rose to 7,000 tons and pig iron had been made for 48 sh. per ton. Pig iron was used in the manufacture of pipes, railway sleepers, chairs and other castings.[3]

We will now briefly refer to the proposals made by some Government Officers, who were also experts in the field, for the establishment of the iron and steel industry in India through the agency of the State. It seems that there was unity of purpose among these officers (the "men on the spot") who could not ignore the reality. *Laissez-faire* was not an obsession with them.

Captain Townsend wrote an interesting note, dated June 3, 1894, on the iron ores of Southern India.[4] His proposal was to save "all home remittances on account of iron and steel" by setting up a local iron and steel industry and "ordering" the State Railways, Military and Public Works Departments to use the products of the local industry. He was aware of "the general objections to Government interference in industries", but "desperate diseases", needed "powerful remedies". He particularly referred to the problems of Indian finance which "is now suffering from a mortal sickness". He strongly felt that it would pay to set up a rolling mill in view of the rising demands for rails alone.[5] His proposals were rejected by the Government of India who did not want to "undertake any mining or manufacturing operations".[6]

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[1] CD—Coal and Iron, September, 1882-B; this proposal was reiterated in the Despatch of the Government of India, January 8, 1889 (Coal and Iron, January, 1889-B).

[2] See Chapter IV.

[3] See the Prospectus issued by the Bengal Iron and Steel Co. (CD—Coal and Iron, November, 1889-B).

[4] Collingwood Townsend was the Superintendent, Gun-Carriage Factory. Madras. For his note see CD—Coal and Iron, December, 1894, No. 13-14.

[5] *Ibid.* For the proposed iron and steel industry he suggested, as Mahon did, "some site on the Hooghli".

[6] *Ibid.*

Major Mahon's report on the iron and steel manufacture, which was submitted in 1899, has been alluded to. He strongly felt that the Government should "practically demonstrate" the feasibility of iron and steel manufacture in India. The Secretary of State in his despatch, dated 9th November, 1899, wanted to know if any steps should be taken to promote the establishment of large iron works at Port Canning or at any other State.[1] It may be of interest to follow what the officers of the Public Works Department and the Chambers of Commerce thought of the proposal. Higham thought that the Government would "never propose" to start works on a large-scale as envisaged in Mahon's report. But he proposed that the Government should "incur the necessary outlay on such works as would afford a practical demonstration" of the possibility of steel manufacture, so that capitalists might be induced to take it up. He warned (and we will presently see that his warning proved prophetic) that there would be "an indefinite postponement" of steel manufacture in India, if the Government refused "to incur a certain amount of risk in leading the way".[2] Holderness, however, thought that Higham's proposals might have "a deterrent effect on private enterprise". He referred to the successful endeavours of the Bengal Iron and Steel Co. in the manufacture of iron at Barakar and he "would do nothing to check such enterprise by Government intervention".[3] Trevor also proposed that the initiation of steel manufacture should be left to private enterprise, but he doubted the possibility of any early manufacture of steel as distinguished from pig iron at Barakar. He felt, as Higham did, that the Government "cannot really afford to wait indefinitely for a development which ought to result in a great saving of public money".[4] The Chambers of Commerce of Bombay and Calcutta also could not recommend "the conduct of such an experiment by the State"; they contended that private enterprise should be encouraged to take up the work.[5]

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[1] See Chapter IV.

[2] T. Higham (later Sir T. Higham) was the Secretary, Government of India, PWD. Higham also referred to the advantages that would result from the successful establishment of steel works in India (CD—Coal and Iron, March, 1901, No. 1-B).

[3] Note of T. W. Holderness (*Ibid*).

[4] Note of A. C. Trevor (*Ibid*).

[5] CD—Coal and Iron, November, 1901, Nos. 1-6-B. The Bengal Chamber of Commerce further proposed that the Government should "advertise freely" that "liberal concessions" would be given to parties who would invest capital in iron and steel industry.

The Bengal Iron and Steel Company, in their letter dated 26th February, 1901, promptly announced that they would undertake the manufacture of steel and wanted an assurance that the Government would not embark on any such undertaking.[1]

Lord Curzon's Government in their despatch, dated 5th September, 1901 expressed their great reluctance "to recommend the establishment of Government Works at Port Caning or elsewhere for the sake of giving a lead in the development of an iron and steel industry in India even if there were no immediate prospect of the matter being taken up by private enterprise".[2] With this Despatch the proposal of state undertaking in steel manufacture was nipped in the bud. The Bengal Iron and Steel Co. had lost heavily when they attempted the production of steel.[3] Steel manufacture was postponed till it was taken up by the Tata Iron and Steel Co. in whose success private enterprise has since gloried, perhaps not without justification.

COAL MINES

Some coal mines were worked by the Government not in Bengal where private enterprise held the field, but in Central Provinces, Central India, Baluchistan and the Punjab. The Government had to incur capital expenditure, though on a small-scale, on the working of the mines which served the important purpose of supplying the railways with fuel. It will be seen that Government action contributed to the efficient working of the mines whose production rose during a period when the industry was in the initial phase of development.

The Warora mine situated at Chanda in the Central Provinces was opened in 1871, and it was the first coal mine to be worked by the State. Capital outlay in 1871 amounted to Rs. 51,183 ; the total capital outlay expended up to 1899 was Rs. 17,14,745.[4] Nearly the whole output was taken by the Great Indian Peninsula Railway, while the other customers were the Empress Mills of Nagpur, the Hinganghat Mill Co., the Brick and Tile Factory and the Warora Colliery Works.[1] From January, 1884, coal was sold to the Great Indian Peninsula Railway at the reduced rate of Rs. 4-8-0 per ton, so that by 1889 the reductions benefited the Railway to the extent of Rs. 2,14,000.[2]

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[1] Letter from BISCO, 26th Feb., 1901. They averred that Government enterprise "would seriously jeopardise" their endeavour. (CD—Coal and Iron, February, 1903, Nos. 1-17-B).

[2] Despatch of the Government of India, September 5, 1901 (CD—Coal and Iron, September, 1901, No. 6-B). The Government, however, desired to offer "all encouragement in our power" to private promoters of steel industry.

[3] See Chapter IV.

[4] Report from R. Wordsworth, Manager of the Colliery, 1899-1900; CD—Coal and Iron. October, 1900, Nos. 2-3-B.

It seems that the Colliery was worked on modern lines and managers, mining engineers, deputy over-men were brought from England.[3] British soldiers, who were "colliers by trade", were employed as underworkers in order to obviate the necessity of importing skilled workers from England.[4] Indian workers drawn from the agricultural classes were employed in the colliery, and their number rose from 692 in 1887 to 1265 in 1901.[5]

The output of the Warora Colliery was about 60,000 tons in 1881, and from 1886 production rose to more than 1,00,000 tons.

OUTPUT OF WARORA[6]

Year	Tons
1881	59,507
1882	72,798
1883	95,737
1884	94,720
1885	98,587
1886	108,130
1887	110,716
1888	134,326
1889	124,770
1890	131,494
1891	131,933
1892	115,732
1893	121,946
1894	112,202
1896	114,800
1897	113,454

(*Contd.*)

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[1] *Ibid.* The purchase made by the GIPR rose from 17,503 tons in 1879 to 66,041 tons in 1899. The Brick and Tile Factory was worked by Government.

[2] Letter from Secretary to Chief Commissioner, PWD, Central Provinces (CD—Coal and Iron, 1890, No. 3-4-B).

[3] They were engaged by the India Office.

[4] CD—Coal and Iron, May, 1891, Nos. 6-10-B. In 1899-1900 there were seven Europeans employed in the Colliery. Stores required for this Colliery were imported through the India Office; local purchase was also made.

[5] See *Statement of Collieries,* CD—Coal and Iron, November, 1887; *Ibid,* 1889; *Report of* Geo. A. Stonier, 1901, *Ibid,* December, 1902.

[4] Figures have been collected from the Annual Returns of the Colliery.

OUTPUT OF WARORA (*Contd.*)

Year	Tons
1898	115,682
1899	132,502
1902	155,336
1906	32,327[1]

Thus the production of the Colliery reached the highest point in 1902 when its resources began to fail. In 1906 the output was only 32,327 tons and the Warora mines were abandoned and operations were transferred to Ballarpur where the work of extraction began in 1907.[2] In 1913 the Ballarpur Colliery was sold at a price of Rs. 7,50,000.[3]

The Government also worked for some years the Umaria Coal mines in Rewah. The coal field of Umaria which "covers three square miles, and is computed to contain 28 million tons of coal" was of great importance as a source of supply for the North West Provinces and the Punjab.[4] The work on the mine commenced in 1880-81.[5] A long correspondence passed between the Government of India and the Secretary of State on the working of the Umaria Coal-fields. The Government of India proposed that the coal-fields should be worked by a Railway Company or by the State.[6] In his despatch, dated the 16th October, 1884, the Secretary of State recommended that the working of the mines should be left "in the hands of a Company", and direct management by the Government, if decided, was only to be temporary.[7] The Government of India felt that public interest demanded that the mine should not be made over to a private Company who "will have no interest except that of keeping up the price of coal." The coal industry should be developed in the interest of "the expansion of railway traffic and commerce" and not "the enrichment of a close body of private speculators".[1] It was decided that the Colliery would be worked by the Government on behalf of the Maharaja of Rewah State until he attained his majority. A royalty of 8 as. per ton was to be paid to the Rewah State; in 1894 royalty was reduced to 4 as.[2]

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[1] *Note on the Production and Consumption of Coal* (CI—Industries, December, 1910, File No. 37).

[2] FD to, No. 49, February 14, 1907 (Pro. Vols.) Ballarpur was 38 miles from Warora. Between 1903 and 1906 expenditure on the operations at Ballarpur amounted to Rs. 1,80,409. Total capital outlay was estimated at 4 lakhs of rupees. Ballarpur Colliery was considered to be useful for "the ginning presses and cotton mills in the neighbourhood".

[3] FD from, No. 129, October 17, 1913 (Pro. Vols.) Net receipts from the Colliery between 1908-09 and 1911-12 averaged Rs. 1,40,288. The output of the Ballarpur mines was 85,237 tons in 1909.

[4] Report by Prof. W. R. Dunstan, M.A., F.R.S. (CD—Coal and Iron, November, 1898-B, No. 1-2).

[5] The Colliery was worked under the supervision of T. W. Hughes, Assistant Superintendent, Geological Survey of India. CD—Coal and Iron, February, 1890, No. 17-B).

[6] Railway Despatch of the Government of India, June 27, 1884. (Precis of correspondence on the working of the Umaria coal-fields, CD—Coal and Iron, January, 1897, Nos. 1-33-B).

[7] Railway Despatch of the Secretary of State, October 16, (*Ibid*). He averred that the working of the colliery "should be transferred to a company as soon as possible".

In Umaria also mining engineers, managers and deputy overmen were brought from England; Indian workers drawn from agricultural classes were employed and their number rose from 362 in 1887 to 468 in 1889.[3] Production made rapid progress from 1888-89; the customers were the Great Indian Peninsula Railway, the Indian Midland Railway, the Bengal Nagpur Railway and the cotton mills.[4] The following table will show the progress of production at the colliery.[5]

OUTPUT OF UMARIA MINES

Year	Tons
1883-84	1,290
1884-85	2,187
1885-86	9,445
1886-87	7,724
1887-88	25,547
1888-89	50,067
1889-90	57,274
1890-91	75,812
1891-92	69,761
1892-93	94,847
1893-94	104,568
1894-95	126,706
1895-96	121,189
1896-97	116,571
1897-98	119,200
1898-99	153,540

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[1] Despatch from the Government of India, December 9, 1884. (CD—Coal and Iron, December, 1884-B). Lord Ripon's Government reiterated that the Colliery should be worked by the State.

[2] Despatch from the Government of India, September 30, 1887 (CD—Coal and Iron, October, 1897-B).

[3] Figures have been taken from the *Statement of Collieries* for 1887 and for 1889 (CD—Coal and Iron, November, 1889 and November, 1890-B); price of coal was Rs. 3.07 per ton in 1899.

[4] *Annual Report of the Umaria Colliery*, 1890-91 (CD—Coal and Iron, June, 1891-B).

[5] Figures have been taken from the Annual Reports of the Umaria Colliery.

It seems that the colliery had been worked at a loss up to the end of 1888-89; production increased from that year. A gross capital outlay of 8¼ lakhs of rupees had been incurred till 1888-89.[1] When the initial difficulties were being overcome, Messrs. Clarke, Rawlins and Co., a London firm, applied for a lease of the Colliery. Lansdowne's Government rejected the proposal.[2] Umaria coal assumed particular importance, as the Mohpani coal-field seemed to be "practically worked out".[3] In his despatch dated 7th September, 1893, the Secretary of State laid much emphasis on the importance of the Umaria, Mohpani, Warora and Singareni coal fields as sources of supply for the railways whose needs should be met "without resorting to the use of English coal". India's "foreign payments" should be cut down. But he recommended that the Umaria Colliery should be transferred to a private company, since the state should not be associated with "commercial operations".[4] In 1894, Messrs. Barry and Co. and Messrs. A. Yule and Co. of Calcutta put forward applications to work the Colliery. But the Government of India decided to continue to work the Colliery.[5] In 1898 the Rewah Darbar, following negotiations with the Government, decided to take over the Colliery.[6] On April 1, 1899, it was transferred by Curzon's Government to the Rewah State.[7]

The Government owned the Dandot and Pidh mines of the Punjab and the Khost and Shahrig mines of Baluchistan; the primary object was to supply fuel for the North West Railway who worked the mines on behalf of the Government. The Dandot and Pidh mines opened out in 1886, the Khost mines in 1887 and the Shahrig mines in 1894.[8] Dandot coal was sold at Rs. 10 per ton to the North

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[1] Despatch from the Government of India, January 28, 1890 (CD—Coal and Iron, February, 1890-B).

[2] *Ibid.* It was pointed out that "initial difficulties in running the concern have been overcome".

[3] Note by J. H. Glass, Superintending Engineer, C.P. (CD—Coal and Iron, May, 1890-B).

[4] CD—Coal and Iron, January, 1894-B.

[5] Precis of correspondence on the working of the Umaria Colliery (CD—Coal and Iron, January, 1897-B).

[6] CD—Coal and Iron, April, 1898, Nos. 1-4-B.

[7] CD—Coal and Iron, March, 1899, B. The Rewah Darbar agreed to refund Rs. 9,34,457 which represented the net capital expenditure of the Government.

[8] *Report on the Dandot and Pidh Mines* by J. Grundy, Inspector of Mines (CD—Coal and Iron, January, 1897, Nos. 16-18-B); *Report on the Khost and Shahrig Mines* by J. Grundy (CD—Coal and Iron, May, 1899, Nos. 1-4-B).

West Railway and Rs. 17 to the public.[1] Managers and deputy overmen were brought from England.[2] Miners were recruited from the agricultural classes; the number of miners at Dandot was 1040 in 1887 and 1536 in 1901, and at Khost 400 in 1889 and 461 in 1901.[3]

The Khost mine was small, and its production was 7,427 tons in 1889, 10,662 tons in 1899 and 14,696 tons in 1900.[4] The output of the Shahrig mine was only 5 tons in 1899, and it was abandoned in 1900.[5] The output of the Dandot and Pidh mines rose to about 70,000 tons from 1891-92, and their prospects began to improve since that year.

OUTPUT OF DANDOT AND PIDH MINES[6]

Year	Tons
1884-85	21
1885-86	695
1886-87	3,920
1887-88	9,747
1888-89	13,382
1889-90	32,014
1890-91	38,014
1891-92	73,633
1892-93	69,953
1893-94	66,075
1894-95	59,493
1895-96	71,374
—	—
1898-99	75,566
1899-1900	81,502

Railway Workshops

The railway workshops came to be founded in the wake of railway construction. Some of the biggest railway workshops were founded by the railway companies. The State Railways also built their workshops. The Great Indian Peninsula Railway set up their workshops at Byculla in 1854; in 1878 the workshops were removed to Parel. The number of workers rose from about 800 in 1854 to 7410 in 1909.[1] The Jamalpore Workshops of the East Indian Railway were founded in 1862; workshops were also built at Lilooah which employed 5097 operatives in 1908.[2] The Bombay, Baroda and Central Indian Railway Workshops were opened at Parel in 1868; the number of operatives was 4062 in 1909.[3] The Kancharapara Workshops of the East Bengal State Railway were large, which afforded employment to 2158 operatives in 1908.[4] The North Western Railway Workshops were at Lahore.[5] These workshops were mainly concerned with railway carriage building, which developed into an important industry, and with repairs. By 1890 the potentiality of the railway workshops was being revealed. The Jamalpore Worshops were "making its own cast-iron sleepers, rolling its own scraps, making its own bolts and nuts." Even locomotives were built in the workshops of BBCIR, and "partly built" in the Jamalpore workshops.[6] In 1898 two blast furnaces and a rolling mill were erected at the Jamalpore Workshops, and production of steel on a small-scale was undertaken in 1901.[7] The progress made by the railway workshops between 1901 and 1905 will be evident from the following table:

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[1] J. Grundy, *Op. Cit.*

[2] J. Grundy, *Op. Cit.*, E. L. Hope, Manager of Dandot and Pidh mines, had five years' practical experience in England; R. Elliot, deputy over-man, had 24 years' practical experience (19 years in England, 2 years in Mexico and 3 years in India).

[3] Figures have been taken from the Report of J. Grundy and from the Report by Geo. A. Stonier (CD—Coal and Iron, December, 1902).

[4] CD—Coal and Iron, October, 1900-B.

[5] *Ibid.*

[6] Figures have been collected from the Annual Reports of the mines (CD—Coal and Iron, Pro. Vols). The price of Dandot coal varied between Rs. 6-8 as and Rs. 9-8 as per ton.

RAILWAY WORKSHOPS[8]

	1901	1902	1903	1904	1905
Number	77	83	90	98	96
Persons employed	60,294	67,325	68,775	77,785	79,082

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[1] *Bombay City Gazetteer*, Vol. I (1909), pp. 502-03. The railway was acquired by the State in 1900.

[2] *Bengal District Gazetteers*, Howrah (1909), p. 121; also see *Bihar District Gazetteers*, Monghyr (1960). The railway became State-owned in 1880.

[3] *Bombay City Gazetteer*, Vol. I (1909), pp. 502-03.

[4] J. G. Cumming *Op. Cit.*, p. 2. The EBR had small workshops at Sealdah, Chitpur, and Balliaghata. Also see *Bengal District Gazetteers*, 24-Parganas, p. 150.

[5] *Imperial Gazetteer of India*, Vol. XVI. They employed 4,669 hands in 1904.

[6] FD from, No. 3, January 8, 1891, Pro. Vols., Memo by Sir A. M. Rendel, November 14, 1891. See the Enclosures.

[7] See Note of C. W. Hudson, CD—Coal and Iron, September, 1901, No. 3-7.

[8] PPHC, 94, 1907. *Statistical Abstract*.

In a period when the Indian engineering industry was in the initial phase of development, the importance of the railway workshops cannot be doubted. We have referred on more than one occasion to the rapidly rising expenditure on railway stores. India had to pay for these stores in sterling. Rendel, the Consulting Engineer of the India Office, made an interesting suggestion in 1907.[1] He urged the construction of locomotives, rolling stocks, permanent-way material, and other railway plant in the railway workshops. He averred that this would "free India from the disastrous effect, on her railway finance, of the high prices which sometimes prevail in England". If private firms were encouraged, the bulk of the advantage would go to "English capital invested in manufactures in India rather than to Indian railways and the Indian labour".[2] This was, no doubt, a novel and illuminating suggestion made by a man of wide experience and foresight. The Government of India, however, could not accept it. They were scared by the fact that Rendel's proposal would involve the State into considerable capital expenditure. Besides, State enterprise was objectionable in the prevailing "political conditions". The despatch reads: "The financial objection would alone suffice to dispose of any project for an active development of state enterprise, but there are also grounds of general policy, which are of special importance in the present political conditions, in favour of the assumption by the Government of India of a line of action which may be calculated to encourage the absorption of local capital in industries".[3] It was clearly a policy of restricting state enterprise and encouraging private enterprise. The Indian engineering firms, however, had much to say on Government encouragement of local enterprise.[4]

It is noteworthy that the Indian Industrial Commission laid much emphasis on the great importance of the railway workshops which represented "by far the most important development of mechanical engineering in India".[5] It seems, however, that sufficient provision was not made, after nearly half-a-century, for the technical training of Indians in these workshops. The Commission noted in 1916 that "very few Indians have risen to the rank of foremen, still fewer have been appointed to the superior establishment".[1] There is little evidence to prove that Indian workers lacked the capacity to learn. They developed into "first class workmen when associated with competent formen".[2] There was a demand among the Indian public that Indians should be employed in large numbers in the railway workshops and "engaged as apprentices in higher engineering work".[3] This demand fell on deaf ears, and the Government kept on complaining about the scarcity of skilled labour.

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[1] Memorandum by Sir A. Rendel, CD—Stores, 1908, Pro. Vols.

[2] *Ibid.* The memorandum is dated July 31, 1907.

[3] Despatch from Government of India, March 26, 1908. CD—Stores, April. 1908, B. It was the period of the *Swadeshi* movement.

[4] See Chapter V.

[5] There were over 70 railway workshops in 1916; the largest were the Jamalpore Workshops of EIR, the Bombay Workshops of GIPR, the Lahore Workshops of NWR. *Report of the Industrial Commission* (1916-18), pp. 25-26. A. C. Car, Chief Mechanical Engineer of BNR, noted in his evidence that many of the large workshops were equipped "with the most

GOVERNMENT WORKSHOPS

The Government founded defferent kinds of workshops in order to meet the requirements of the Departments. It was both economical and convenient to obtain certain classes of stores which were of an ordinary character from the Workshops. In 1876 the Government of India adopted a resolution in the Public Works Department recommending that arrangements should be made to obtain "certain classes of manufactures" from "the several Government Workshops".[4] It seems that the arrangements proved successful to a certain extent. The Canal Foundry and Workshops of Roorkee, the Dowlaishwarum Workshops, the Madhopoor Workshops, the Postal Workshops of Calcutta and Aligarh, the Army Clothing factories of Calcutta and Madras, the Cotton gin factory of Dharwar,

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modern plant and machinery", and the work turned out by them reached high standard. Minutes of Evidence, Vol. II, p. 651.

[1] *Report of the Indian Industrial Commission* (1916-18), p. 26. This was attributed to "the lack of provision for training them", though these workshops were the main training ground in India "for engineering artisans of every class".

[2] Evidence of A. C. Car, *Op. Cit.*, pp. 649-51. Mr. Car had been employed in Indian railways for twenty-five years, and he spoke from experience that Indian workers, if given opportunities for technical education, could shape into "competent foremen", and could "possibly rise beyond that grade"; there was great scarcity of "competent skilled handicraftsmen", and hence the importance of treating "the question of training Indian apprentices in railway workshops from a much broader point of view".

[3] Evidence of Dr. P. C. Ray, Minutes of Evidence, Vol. II, pp. 34-36. *Report of the Indian Industrial Commission* (1916-18).

[4] Resolution of the Government of India, PWD, October 26, 1876. CD—Accounts and Finance, No. 19, November, 1876-B. Lord Ripon's Government referred to the Government Workshops as local sources of supply when the substitution of Indian manufactures for European manufactures was recommended. See Chapter II.

the Canal Workshops of Amritsar undertook the manufacture of a wide range of goods,[1] and the Departments obtained, as the indents show, stores from these Workshops.

The Roorkee Workshops were founded in 1845-46 and expanded in 1850; the Workshops achieved some measure of success in the production of padlocks, brass locks, knives, parallel rulers. At Roorkee was founded the Thomason Engineering College in 1848; students could get practical training in the Roorkee Workshops which took apprentices.[2] In 1909 the workshops undertook the manufacture of agricultural implements and scientific instruments and apparatus.[3] The Telegraph Workshops of Calcutta (Alipore) were founded in 1859; the number of employees was 639 in 1911. The Workshops undertook the manufacture and repair of telegraph posts and cables and miscellaneous instruments.[4] The Aligarh Postal Workshops executed different kinds of work, viz., letter boxes, postman's bags, parcel bags, belts for postmen, lamps and lanterns, locks and padlocks, tables and almirahs. The value of their outturn increased from Rs. 1,11,338 in 1879 to Rs. 2,52,657 in 1880.[5] The Army Clothing Factory of Calcutta (Alipore) was founded in 1852; the number of employees was 380 in 1911.[6] The Central Canal Workshop at Amritsar was founded in 1901. It was an engineering workshop, and had an iron foundry; bridges for canals, tramway plant and repair work for engines and boilers were undertaken. The value of outturn rose from Rs. 81,806 in 1901-02 to Rs. 2,50,000 in 1906-07.[7] The Workshops did not reach substantial size. Nevertheless, they represented new experiments in obtaining certain classes of stores at much less cost to the Government.

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[1] The list is incomplete. Indents were sent to the India Office for machinery and other stores for these workshops; but the indents or the Accounts of the Home Treasury do not show the value of the stores. The value of stores for the Dowlaishwarum Workshop (Madras) for the year 1870-71 was £ 4,497. See FD from, No. 171, June 8, 1871-B. The Canal Workshops of Dowlaishwarum were large. The headworks of the Bari Doab Canal were at Madhopoor (Punjab).

[2] CD—Accounts and Finance, November, 1881-B; also see *Imperial Gazetteer of India*, Vol. XXX (1908). The annual outturn was valued at 2 to 3 lakhs in 1904.

[3] See the *Book on Nomenclature and Classification of State Railway Stores*, Appendix H, CD—Stores, October, 1909, File No. 50.

[4] *24-Parganas District Gazetteer*, (1914), pp. 149-50.

[5] CD—Accounts and Finance, February, 1881, No. 446-51. They employed about 300 hands in 1904. *Imperial Gazetteer of India*, Vol. V.

[6] *24-Parganas District Gazetteer* (1914), pp. 149-50.

[7] FD to, No. 237, June 27, 1907. The Workshops employed about 250 hands, *Imperial Gazetteer of India*, Vol. V.

HARNESS AND SADDLERY FACTORIES

The requirements of the Government for leather and manufactures of leather were considerable, and the value of such goods imported through the India Office was not an insignificant item of expenditure. In 1860 the Government decided to carry on experiments in leather manufacture in India, and the Cawnpur Harness and Saddlery Factory was started. It was the only Government factory for the supply of "harness, saddlery and accoutrements for the army".[1] The experiment proved successful; in fact the development of leather manufacture in India was "almost entirely the outcome of military efforts to obtain supplies for boots and accoutrements".[2] The Cawnpur factory reached a substantial size towards the close of the century; the annual output reached a million and half pounds.[3] From 1910-11 the output had to be curtailed in consequence of a reduction in the quantity of leather required by the Government.[4] The following figures will show the leather outturn at the Cawnpur factory.[5]

ANNUAL OUTTURN OF LEATHER

Year	lb.
1905-06	1,341,025
1906-07	1,416,376
1907-08	1,354,577
1908-09	1,093,501
1909-10	1,058,874
1910-11 (estimated)	803,000

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[1] FD to, No. 314, October 1, 1890 (Pro. Vols.).

[2] *Report of the Indian Industrial Commission* (1916-18), Appendix D, pp. 356-57. In 1880 Mr. (later Sir) W. E. Cooper with Sir George Allen founded the firm of Messrs. Cooper, Allen and Co.; they started the Boot and Army Equipment Factory; Government provided the market in the early years for the bulk of the outturn. From 1883 the firm began to supply boots for the Army. Messrs. Cooper, Allen and Co. employed 3,467 operatives in 1905; the North Western Tannery, another Cawnpur manufacturer, employed 556 hands. Messrs. Cooper, Allen and Co. acted as managing agents for this tannery from 1904. See *U.P. District Gazetteers, Vol.* XIX (Cawnpur).

[3] Note by E.S.F. Walker, 1908, CD—Industries, File No. 16, 1908. Major Walker noted that Government had built a factory "than which very few in Europe are larger". It employed 2,196 workers in 1905. The price of leather was "gradually approaching" the cost of European leather.

[4] Note by R. H. Mahon, CD—Industries, File No. 19, 1911.

[5] *Ibid.*

In 1891 another Harness and Saddlery Factory was founded in Madras. Messrs. Adamjee Peerbhoy and Sons, a Bombay firm, supplied leather to this factory. In 1909 the Madras factory was closed, as there was a reduction in the demand of Government departments.[1]

The supply of leather and leather manufactures was also entrusted to private shops, and Messrs. Cooper, Allen and Co. of Cawnpur received large Government orders for boots.[2] The Returns indicate that the value of leather and leather manufactures obtained from local manufacturers (including Government factories) rose appreciably from 1892-93: the value of such goods was only Rs. 20,289 in 1882-83; it rose to Rs. 6,99,361 in 1892-93, Rs. 13,18,003 in 1901-02 and Rs. 7,94,132 in 1913-14.[3]

ORDNANCE FACTORIES

The Government founded the Ordnance Factories and undertook the direct manufacture of a number of special goods, needed for defence. Some of the large Ordnance Factories of India were founded during the first half of the nineteenth century. In a letter of the Director-General of Ordnance, dated January 9, 1889, the factories of Dum Dum, Ishapore, Cawnpore, Fategarh and Cossipore have been mentioned.[4] There were thirteen Arms and Ammunition Factories and Arsenals in 1905; the number of persons employed was 12,958.[5]

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[1] Note of the Department of Commerce and Industry, CD—Industries, 1911. The firm of Messrs. Adamjee Peerbhoy and Sons was founded by Adamji Peerbhoy (later Sir) in 1889; a large tannery was built near Bombay; they began to supply leather to the Madras factory in 1904. The firm manufactured saddlery, boots, shoes, belts and bags.

[2] *Note on the industrial condition and possibilities of the UP* by A. C. Chatterjee, CI—Industries, September, 1907, File No. 20. In 1905 the number of tanneries (including Government factories) was 15; the number of persons employed was 8,539 (*Statistical Abstract*, PPHC, 94, 1907).

[3] Figures have been taken from the Returns.

[4] CD—Accounts and Finance, March, 1889-B. The Gun-Carriage Factory of Fategarh was established in 1818; the number of hands employed was 795 in 1903. (*Imperial Gazetteer of India*, Vol. XII). The factory at Dum Dum was founded in 1846; it undertook the manufacture of cartridges and small arms (*24-Parganas District Gazetteer*). The Cossipore factory (1846) imported moulding plant from England in 1871 for the manufacture of bronze guns and projectile (FD to, No. 255, October 3, 1871-B).

[5] PPHC, 94, 1907 (*Statistical Abstract*). Mention may be made of the Arms and Ammuintion Factory of Kirkee (Poona District), Cordite Factory of Madras, Gun Carriage Factory of Madras, Gun-Powder Factory of Bombay, Gun Carriage Factory of Jubbulpore.

The Ishapore (Ichapore) factory started the manufacture of rifles in 1907;[1] the number of employees was 2,050 in 1911.[2] The Indian Industrial Commission has referred to the five ordnance factories at Cossipore, Ishapore, Dum Dum, Kirkee and Jubbulpore, and to "the high standard of work turned out by them". These factories developed as important centres for the training of "certain classes of engineering artisans".[3]

It should be noted that the Ordnance Factories were destined to play an important rôle in the industrial development of India. These factories were equipped with modern machinery and could command the services of highly qualified men. It was at the Cossipore factory that steel manufacture was first undertaken in India. It was Mahon, with whose name we have now become familiar, who made a comprehensive report on the possibility of steel manufacture at the Foundry and Shell Factory at Cossipore in 1890.[4] He pointed out that "the forged shell" were obtained from England and this entailed "the remittance to England of the whole cost of the shell". If local production of steel was encouraged, it would save public money and there was no reason to suppose that "the first cost of projectiles will be higher in India than in England", especially in view of the heavy freight and other charges which India had to pay year after year to import "the forged shell". He recommended the erection of a melting furnace as the first step in the production of "cast or forged shell". Long experience had convinced him that European workmen were not likely to work in peace side by side with "the natives", and hence the importance of training the natives who could be trained under European supervision.[5] Mahon also proposed that four men should be selected in India and sent to England to undergo practical training in steel factories. Major-General Walker, who was then the Director-General of Ordnance, strongly supported the proposals of Mahon.[6] He particularly emphasised the point that the Cossipore factory, the only shell factory in India should be "self-contained", for it was undesirable that India should be "absolutely dependent on England" for the supply of ammunition. The supply of ammunition for guns was not the only consideration. Steel was also required for the construction of "carriages for field artillery and of all mountings for heavy guns". The smallest repairs in cast steel could not be executed in India, as there was no local source of supply of steel. Success in the manufacture of cast and forged steel could render valuable assistance to the gun-carriage factories of India in "the supply of steel components and materials", and there was "no limit probably to the eventual requirements of the Ordnance Department as regards the supply of different articles of war material, machinery, and miscellaneous castings".[1] The proposal was sanctioned by the Secretary of State, and in 1896 the steel bar rolling mill was inaugurated in the Cossipore factory.[2] Mahon was then the Superintendent of the Cossipore factory. Public memory is short. Mahon, "the first steel expert" of India, is a forgotten name.

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[1] The steel furnaces and the steel bar mill were transferred from Cossipore to Ishapore sometime in 1903, and manufacture commenced in 1905. In 1920, the Metal and Steel Factory started work.

[2] *24-Parganas District Gazetteer*, pp. 149-50. The Cossipore factory employed 1,271 hands and the Dum Dum factory 2,681 in 1911.

[3] *Report of the Indian Industrial Commission*, 1916-18, pp. 25-26.

[4] *Report on cast steel for India* by Mahon, August 18, 1890 (CD—Accounts and Finance, May, 1891-B).

[5] *Ibid.*

[6] Letter from Maj. General A. Walker, December 2, 1890. (CD—Accounts and Finance, May, 1891, B).

Major General Walker had anticipated the large demands of the Ordnance Department for "different articles of war material, machinery and miscellaneous castings". India had to remit annually large sums of money to England to pay for Ordnance stores. It does not seem that India's sterling payments on account of Ordnance stores decreased; on the contrary, such payments considerably increased towards the close of the nineteenth century and represented a major portion of the total expenditure on "Stores for India". The requirements of the Ordnance Department included orders for small guns, machine guns, filled cartridges and projectiles and machinery which had to be obtained from England.

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[1] *Ibid.* The initial cost of importing and setting up the plant and of establishment was estimated at Rs. 1,30,000. The greater part of the proposed expenditure was to be incurred in England.

[2] FD to, No. 350, November 10, 1898. Messrs. Taylor and Farley were the makers of the rolling mill; Messrs. Handley and Liddle, mechanics sent out by the India Office, inaugurated the rolling mill. In 1901 Mahon could write with a feeling of satisfaction that the Cossipore factory "is already engaged in rolling steel of many sections". (CD—Coal and Iron, November, 1901, Nos. 1-6-B).

STORES FOR ORDNANCE AND MISCELLANEOUS[1]

Year	Value £
1883-84	163,902
1884-85	142,139
1885-86	428,600
1886-87	286,551
1899-1900	189,874
1900-01	673,009
1901-02	1,147,238
1902-03	1,015,005
1903-04	795,670
1904-05	1,142,546
1905-06	433,277
1906-07	1,264,531
1908-09	310,874
1909-10	249,225
1910-11	268,084
1911-12	340,189
1912-13	506,097
1913-14	500,328

The expenditure on Ordnance Stores remained heavy; India had to pay for these stores in sterling. India's defence industry was weakly developed, so that the country continued to be a good market for Ordnance Stores which were imported through the India Office and obtained from British armament manufacturers.

PRINTING PRESSES

The Government set up a number of printing presses. The Central Press at Calcutta was founded in 1863, and the expenditure amounted to Rs. 1,40,056. Extensions were undertaken, and the expenditure increased from Rs. 3,64,758 in 1866-67 to Rs. 4,19,789 in 1879-80 ; the number of employees was 400 in 1866, 900 in 1877 and 1,478 in 1880.[2] The Central Branch Press and the Private Secretary's Press at Simla were also developed ; the expenditure incurred amounted to Rs. 73,378 in 1875, Rs. 75,819 in 1876, Rs. 1,10,767 in 1877-78, Rs. 1,19,969 in 1878-79 and to Rs. 1,51,189 in 1879-80.[3]

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[1] Expenditure includes freight. Figures have been collected from the Accounts of the Home Treasury of the Government of India.

[2] CD—Accounts and Finance, May, 1881-B. The Central Press had two branches—one at Hastings Street, another at Dharamtala Street.

[3] *Report on the working of the Simla Press* (CD—Accounts Finance, October, 1880-B). There was a large Government Press at Allahabad which employed 1,031 hands in 1903. See *Imperial Gazetteer of India*, Vol. V (1908). The list is incomplete.

The Presses were equipped with foundry and workshops which undertook the manufacture of types and other printing materials. It appears that Government workshops achieved some measure of success in the manufacture of printing and lithographic materials. The expenditure on such stores imported through the India Office, however, remained considerable.

PRINTING AND LITHOGRAPHIC MATERIALS[1]

Year	Value of goods imported through the India Office (Rs.)	Value of goods obtained from Govt. Factories (Rs.)	Value of goods obtained from private dealers (Rs.)
1891-92	1,11,581	1,17,473	7,975
1892-93	1,51,880	1,15,218	12,269
1893-94	61,947	1,11,774	11,039
1894-95	84,638	1,09,448	15,888
1895-96	1,48,910	95,665	7,481
1896-97	1,20,958	1,22,587	11,802
1897-98	2,91,649	1,19,502	12,362
1898-99	1,76,531	1,39,973	10,398
1904-05	—	4,525	14,349
1905-06	—	3,695	6,013
1906-07	—	40,417	28,519
1907-08	—	15,650	14,456
1908-09	—	15,625	31,525
1909-10	—	1,275	22,155
1910-11	—	34,001	9,063
1911-12	—	1,053	7,808
1912-13	—	nil	nil
1913-14	—	3,487	10,766

We will now refer to the Annual Returns which show the value of goods obtained from Government Factories. Though the value remained small (compared to the total value of stores), the goods covered a wide range—iron; steel; machinery; building and engineering materials ; coal and coke ; tools and plant ; chemicals and drugs ; printing and lithographic materials ; scientific instruments ; woollen goods ; cotton, linen and silk goods ; leather and leather goods ; brass ; zinc ; hardware and cutlery ; articles made of wood ; stationery goods. These goods were consumed by the State Railways, the Public Works Department, the Ordnance Department, the Mints, the Survey Department, Government Presses, the Meteorological Department, etc.

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[1] Figures have been taken from the Returns.

VALUE OF GOODS OBTAINED FROM GOVERNMENT FACTORIES.[1]

Year	Value (Rs.)
1891-92	15,89,849
1892-93	17,96,580
1893-94	17,65,078
1894-95	19,45,360
1895-96	18,76,136
1896-97	19,70,720
1897-98	15,64,557
1898-99	10,94,216
1899-1900	20,85,859
1900-01	24,89,655
1901-02	26,73,459
1902-03	34,80,702
1903-04	25,79,697
1904-05	16,17,726
1905-06	4,01,427[2]
1906-07	4,22,482
1908-09	4,36,690
1909-10	4,23,254
1910-11	4,64,631
1911-12	4,22,052
1912-13	3,36,200
1913-14	5,52,480

The Returns unmistakably point to the potential of the Government Factories as centres of production of a wide variety of goods. The Government Factories had in many cases taken the lead in introducing modern machinery and new technical processes. It was at Cossipore Ordnance Factory that the feasibility of manufacturing steel with local resources was demonstrated. Steel manufacture was later taken up at Jamalpur Workshops. Success was attained in the large-scale manufacture of printing and lithographic materials, scientific instruments, chemicals and drugs, leather and leather goods, building and engineering materials. The Warora and Umaria mines proved to be of vital importance for the railways. The carriage building industry undertaken by the Railway Workshops reached high standard. The Government Factories had the great advantage of commanding the services of highly trained personnel, among whom were Ritter Von Schwarz, Mahon and Townsend. In this respect private concerns suffered from a great handicap. It may be recalled that even the Tatas found it impossible to get their manager from England and had to go to America.[1] The Government Factories, however, did not produce for the market, and hence for them the possibilities "of expanding in new directions and introducing new industries" were "limited by the limited requirements of the Government"; but even so, the possibilities were not exhausted.[2] It seems that the policy pursued by the Indian Government lacked wisdom and foresight; they failed to take a long-term view of the situation. This was revealed when the War came and the Government stared at India's "dangerous dependence on imports" of iron and steel goods and of plant and machinery. The impact of the War was felt; the Government could not afford to wait till private enterprise rose to the occasion. The Ordnance Factories had to be extended; a new factory for the manufacture of acetone was started; manufacture of army clothing and leather goods considerably expanded.[3] The War posed new problems, and the Government had to depart from the *laissez-faire* policy.

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[1] Figures have been taken from the Annual Returns transmitted to the Secretary of State.

[2] Decrease was due to the exclusion from the Returns of North West Railway for 1905-06 of building and engineering materials manufactured at the workshops of the Railway and of coal and coke supplied to the Railway from its Collieries. These items accounted for a decrease of over 9¾ lakhs. Similarly supplies of stationery to the North West Railway by Stationery Office, Calcutta, were omitted from the Returns. (CD—Stores, 1907, Pro. Vols.).

PIONEER FACTORIES

We will now briefly refer to the measures adopted by the Government to start pioneer factories with State help. At the outset we should point out that the pioneer factories stood in a different category from the Government Factories. In the pioneer factories the Government not only participated in production; the outturn was meant for sale to the public. The objective was to demonstrate to private enterprise the possibilities of success in some select industries. The pioneer factories were set up by the Government; such enterprises involved public investment and risk of failures accompanied them. It was held that even failures might have some value for demonstration purposes.[4]

The movement started in Madras under the inspiration of Alfred

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[1] See Chapter IV.

[2] A. G. Clow, *The State and Industry*, (Government of India publication, 1928), p. 94.

[3] A. G. Clow, *Op. Cit.*, p. 13; Vera Anstey, *Op. Cit.*, p. 217.

[4] A. G. Clow, *Op. Cit.*, p. 95.

Chatterton who carried on, between 1898 and 1903, experiments in pioneer factories. The Madras Government welcomed his endeavours, and granted in 1898 a small amount for experimentation in the manufacture of aluminium at the School of Arts. The experiment in the manufacture of aluminium vessels achieved some measure of success. The following table will show the progress of the industry.

SALE OF ALUMINIUM VESSELS[1]

Year	Value Rs.
1898-99	44,621
1899-1900	91,432
1900-01	1,37,452
1901-02	1,84,550
1902-03	1,69,712
1903-04	2,91,583

The Indian Aluminium Company was founded in Madras by Eardley Norton in 1900. In 1903 this Company took over the aluminium department of the School of Arts. The Aluminium Company became firmly established in later years.[2]

Chatterton also conducted experiments in chrome tanning and in weaving. Messrs. Chambers and Co. started experimental work in chrome tanning in 1902, but suspended operations "in order to develop the more remunerative export branch" of their business. But the experiment of Chatterton was successful; a tannery was built at Sembian near Madras; the total capital outlay amounted to Rs. 69,596. Water-buckets, shoes and sandals were manufactured, and the sales between 1903-04 and 1910-11 amounted to Rs. 4,51,318.[3] The Salem Weaving Factory was opened in 1906; it undertook the manufacture of shawls, cotton goods and silk cloths. The output remained small; the sales amounted to only Rs. 12,000 in some years.[1]

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[1] *Report of the Indian Industrial Commission* (1916-18), Appendix J.

[2] *Ibid.* The Company employed 250 workmen. C. A. Innes, Director of Industries, Madras, noted in his evidence that Chatterton's aluminium experiments "prepared the way for private enterprise". Minutes of Evidence, Vol. III, pp. 147-49.

[3] *Ibid.* Apart from capital outlay the Government also spent Rs. 4,86,975 for the factory between 1903 and 1911. It was pointed out that chrome-leather industry "became firmly established" thanks to Chatterton's experiments.

During the period of Lord Curzon's Government, the Department of Commerce and Industry was set up in March, 1905 with the object of guiding "a co-ordinated policy of industrial stimulation in the Provinces".[2] In Madras the first Provincial Department of Industries was instituted in 1906, and Chatterton was appointed Director of Industrial and Technical Inquiries. In 1907 Sir John Hewett, the Lieutenant-Governor of the United Provinces, convened a conference at Naini Tal where much emphasis was laid on the close relation between technical education and State efforts to assist Industry.[3] In 1908 an industrial conference was held at Ootacamund which was attended by representatives of the industrial community. This Conference recommended that pioneer industries should be established on condition that no such undertaking "shall be engaged in unless enquiry has shown that no private capitalist is willing to enter upon it", and that the Government would withdraw when "the commercial advantages of any process" had been demonstrated.[4] In the same year the Madras Government appointed a Director of Industries whose job was "to control pioneer enterprises and industrial education".[5] The movement spread to the United Provinces; an experimental cotton-seed oil factory was established at Cawnpur, and loans were granted for industrial purposes in response to the demand of the Indian public who felt that lack of capital had been a handicap to the development of industries.[6]

It may be of interest to note that the movement aroused the alarm of the European commercial community of Madras who invariably pointed to the menace of Government competition with private enterprise. Messrs. Chambers and Co. expressed the opinion that the Government tannery, which had undertaken the manufacture of chrome leather sandals, should "cease to be run as a commercial concern", and "a date be fixed for such closure".[1] The Chairman of Madras Trades Association felt that "it is undoubtedly wrong in principle for Government to compete in the manner with private enterprise".[2] The Chairman of Madras Chamber of Commerce held that they were "unanimously strongly opposed" to industrial competition and the floatation of industrial companies by the Government.[3] The new movement, however, was eagerly welcomed by the Indian public. The *Swadeshi* movement had begun, and the need for India's rapid industrialisation gripped public attention. The Indian Industrial Conference, which held its first session in 1905, initiated and carried on a sustained movement for industrialisation.[4] They adopted a resolution at the Madras session held in 1908 demanding that "there should be in every province of British India a Department of Industries under a Director of Industries to deal with industrial questions and to be in charge of technical as well as industrial education.[5]

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[1] *Ibid.* The value of woollen shawls imported into India during 1907-08 was "just under 53 lakhs", of which 98 per cent. came from Germany. CI-Industries, January, 1910, File No. 11.

[2] Sir John Hewett was the first Member of this Department, he was succeeded by J. F. Finlay of the Finance Department; the next Member was W. L. Harvey; W. H. Clark was appointed in 1910. L. Fraser, *India Under Curzon and After*, pp. 307-8.

[3] A. G. Clow, *Op. Cit.*, p. 2.

[4] Letter from the Secretary, Government of Madras, Revenue Department, May 8, 1911 (CI—Industries, January, 1912, File No. 23).

[5] *Ibid.*

[6] A. G. Clow, *Op. Cit.*, p. 4.

The movement to encourage Indian industries by means of pioneer factories and Government subsidies could not make headway; it received a check when Lord Morley issued "a damning despatch" on July 29, 1910. It will be necessary to quote extensively from this despatch which reveals Whitehall's attitude on the crucial question of State help to stimulate Indian industries. The despatch came at a time when the *Swadeshi* movement had created a deep impression on the Indian public. Lord Morley was formidably clear on the question of State help to industries :

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[1] Letter dated October 14, 1909. CI—Industries, January, 1912, File No. 23.

[2] Letter from J. O. Robinson, November 2, 1909. *Ibid.*

[3] Letter from W. B. Hunter, November 2, 1909. *Ibid.*

[4] The Indian Industrial Conference was formed in the wake of the *Swadeshi* movement; it held its first session at Benares (1905), with R. C. Dutt as the President, second session at Calcutta (1906), third session at Surat (1907), fourth session at Madras (1908), fifth session at Lahore (1909), sixth session at Allahabad (1910), seventh session at Calcutta (1911), eighth session at Bankipore (1912); R. C. Dutt, D. E. Wacha, R. N. Mukherjee, Lajpat Rai, G. Subramaniya Iyer, V. C. Thackersey, R. N. Mudholkar, M. M. Malaviya, V. G. Kale, P. N. Bose, D. P. Sarbadhikari, Dr. Nilratan Sircar, T. Palit, J. Chaudhuri, Jadunath Sarker were associated with the activities of this body. The Industrial Conference laid particular emphasis on the need of Government help to stimulate Indian industries; technical education and the establishment of more technological institutes, engineering colleges, technical schools in industrial centres; relaxation of the Stores Rules; fiscal protection; removal of the Cotton Excise Duty. The papers read and the resolutions adopted at the various sessions of this body throw a good deal of light on the trend of economic thought and of nationalism during the *Swadeshi* phase (See CI—Industries, Bundles, 1905-12).

[5] Fourth Indian Industrial Conference, December, 1908 (CI—Industries, February, 1909, File No. 9).

> "I have examined the account which the Madras Government have given of the attempts to create new industries in the province. The results represent considerable labour and ingenuity, but they are not of a character to remove my doubts as to the utility of State efforts in this direction, unless it is strictly limited to industrial instruction and avoids the semblance of a commercial venture.... The policy which I am prepared to sanction is that State funds may be expended upon familiarising the people with such improvements in the methods of production as modern science and the practice of European countries can suggest; further than this the State should not go and it must be left to private enterprise to demonstrate that these improvements can be adopted with commercial advantage".[1]

The effect of this despatch was seen in the abolition of the Department of Industries as a separate Department in Madras and in the closure of the pioneer factories. The Sembian tanning factory was sold to Rewah state in 1911; the Salem weaving factory was closed in 1910.[2] In the United Provinces the Cotton-seed oil factory was closed. The despatch gave rise to deep dissatisfaction among the Indian public. The movement had become popular and this could clearly be seen in the voluminous evidence recorded by Indian industrialists and businessmen before the Industrial Commission.[3] The Indian Industrial Conference interpreted the action of the Secretary of State "as unduly limiting State help in industrial development".[4] An agitation started in Madras. The Government wrote to the Secretary of State that "the people of Madras" felt that Government should be permitted to conduct pioneer factories.[1] The Government of India requested the Secretary of State to modify his decision. It was pointed out that the Madras experiments did not interfere with private enterprise, and the embarking "on rash and speculative undertakings" was not contemplated. The example of Japan was cited where the State pioneered industries *pari passu* with the development of technical education.[2] The situation showed no sign of improvement when Lord Crewe, the new Secretary of State, issued his despatch on March 15, 1912. Lord Crewe wanted to "re-affirm my predecessors's decision against the extension of its activities to trading on commercial lines". He was, however, "prepared to recognise that in certain cases instruction in industrial schools may be insufficient and may require to be supplemented by practical training in workshops".[3]

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[1] Morley's despatch, Revenue No. 50, July 29, 1910 (CI—Industries, January, 1912, File No. 23).

[2] *Report of the Indian Industrial Commission* (1916-18), Appendix J.

[3] *Ibid.* Minutes of Evidence, Vols. II and IV. The Indian Economic Society, Bombay, noted that the Government "might undertake to pioneer new industries", but these industries "should be handed over to private capitalists or Companies", when the experimental stage was over (p. 534, Vol. IV); the Indian Merchants' Chamber and Bureau, Bombay, were also "in favour of Government starting pioneer factories.... when other methods have not been potent in attracting capital" (p. 164); the Ahmedabad Millowners' Association were "in favour of State pioneering industries" (p. 447); Dr. P. C. Ray held that Government should start "small industries and industries which are new to the place and will not compete with an existing industry" (pp. 34-36, Vol. II).

[4] Sixth Indian Industrial Conference, Allahabad, 1910, (CI—Industries, February, 1911).

The attitude of the Indian Government did not satisfy Indian public opinion which "desired the industrial regeneration of the country", and urged "the reversal of the policy enunciated by Lord Morley".[4] The War came in 1914, and the urgent need of India's industrial development was keenly felt. In a strongly worded Despatch, dated November 26, 1915, the Government of Lord Hardinge emphasised the necessity of pursuing "a definite and self-conscious policy of improving the industrial capabilities of India.... unless she is to become the dumping ground for the manufactures of foreign nations". It was significantly pointed out that "manufacturers, politicians and the literate public" had long been pressing for a policy of State aid to industries and that the attitude of the Indian public "cannot be left out of account".[5] This resulted in the appointment of the Indian Industrial Commission in 1916. It may be said, therefore, that the War of 1914 marked the beginning of a new shift in the industrial policy of the Indian Government. It seems that the leadership of the political movement generally welcomed the shift in Government policy. It is significant that the Congress proclaimed its suport of the Government during the War. The announcement of a new policy stood the Government in good stead. They could rally the support of the moderates who dominated the Congress. The Montagu-Chelmsford Reforms were in the offing.

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[1] Letter from the Secretary, Government of Madras, Revenue Department, May 8, 1911, (CI—Industries, January, 1912). In 1911 the Madras Legislative Council adopted a resolution requesting the Secretary of State to reconsider his decision; F. W. Orr, H. S. Fraser, J. G. Hamilton voted against the resolution.

[2] Letter dated September 21, 1911 (CI—Industries, January, 1912). It was pointed out that there was "an increasing disposition to exclude Indian students from factories in England".

[3] Secretary of State's Despatch, Revenue No. 24, March 15, 1912 (CI—Industries, April, 1912, File No. 11).

[4] *Report of the Indian Industrial Commission*, 1916-18, p. 80.

[5] V. P. P. Pillai, *Economic Conditions in India*, p. 132; also see Note by Pandit M. M. Malaviya, *Report of the Indian Industrial Commission*, 1916-18, p. 265.

CHAPTER VII

STATE CONTROL

THE Government had to depart from the *laissez-faire* policy as joint-stock enterprise began to make headway in this country. Towards the close of the century investment activity was growing (slowly, it is true); investors, foreign and native, had before them widening horizons to lure them on. Large capitals were being invested in joint-stock enterprise; the fate of thousands of investors, big and small, was involved in this new type of business organisation. There was no want of men who wanted to be rich at the cost of an ignorant public. The Government had to intervene, and a great body of Company Law laying down conditions under which companies should work had to be developed. We will briefly review the growth of joint-stock enterprise (and at a later stage, of the managing agency system) in order to comprehend the circumstances which led the Government to tread the path of State Control. It was a new facet of the industrial policy, the full effects of which were to be evident in time.

Modern joint-stock enterprise was imported in this country from England. The railway companies which operated in India for railway building were joint-stock companies. Between 1845 and 1847 ten railway companies were incorporated in England (following the Registration Act of 1844).[1] The "railway mania" had seized the British investors ; railway building was to be undertaken on a larger scale in the years to come. On August 30, 1845, an Act was passed by the Government of India for incorporating the Assam Company for "the purpose of prosecuting and extending the culture and manufacture of tea" in Assam and North East parts of India. The authorised capital was 50 lakhs, which was divided into 10,000 shares of Rs. 500 each. High share denomination did not prove to be a hindrance; the "proprietors" paid-up 20 lakhs. The subscribers included Europeans and some prominent Bengali landlords and merchants.[1] The Assam Company and other companies existed by reason of special acts. In 1850 was passed an Act "for the regulation of Registered Joint-stock Companies".[2] The liability of every partner for the debts of the company was unlimited. The partners might lose not only the amount of their investment in the company but the remainder of their assets as well. The British public still clung to the concept of partnership liability "to the last shilling and the last acre". The climate of public opinion was changing and limited liability was introduced in England in 1856 and in India in 1857. Joint-stock enterprise received a great stimulus. Liability was limited; small capitals could be mobilised; several types of shares could be issued to appeal to different classes of investors.[3] Joint-stock enterprise began to make headway towards the close of the century. The number of joint-stock companies which were at work in India in 1880-81 was 475 with a paid-up capital of Rs. 14,86,66,364; in 1897-98 the number was 1,572 with a paid-up capital of Rs. 33,12,33,220; in 1903-04 it was 1,489 with a paid-up capital of Rs. 39,71,67,520. Between 1904-05 and 1910-11 there was considerable investment activity (under the impact of the *Swadeshi* Indian capital flowed in cotton industry, iron and steel industry and in banking);[4] the number of joint-stock companies in 1910-11 rose to 2,251 with a paid-up capital of about 64 crores.[5] Thus in three decades the paid-up capital of the joint-stock companies increased fourfold; the increase was particularly evident in Bengal and Bombay.

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[1] East India Railway Co; Great Indian Railway Co; Great Indian Peninsula Railway Co; Great Western Railway of Bengal; Great North of India Railway Co ; Madras-Nellore and Arcot Railway Co ; Direct Bombay and Madras Railway Co; Madras Railway Co; Calcutta and Diamond Harbour Dock and Railway Co; Great Bombay, Baroda and Lucknow Railway Co; Das, *Op. Cit.*, Appendix A, p. 415.

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[1] Some of the Bengali subscribers who formed the Co.: Dawarkanath Tagore, Mutty Lal Seal, Prosunna Coomar Tagore, Ramanath Tagore, Hadjee Mirza Ispahanee, Prawnkissen Law, Raja Radhakanta Deb, Megnarin Roy, Wooma Charun Bose, Radhakanta Mitter. The Company was prohibited from cultivation, manufacture or preparation of opium, coffee or sugar. See Act No. 19 of 1845. In 1834 Dwarkanath founded the Carr, Tagore and Co.; this company and Gilmore Homfray and Co. were amalgamated into the Bengal Coal Co. in 1843.

[2] *Gazette of India,* December, 1850.

[3] G. P. Jones and A. G. Pool, *A Hundred Years of Economic Development in Britain,* 1840-1940, p. 169.

[4] The *Swadeshi* period witnessed a shift in the economic situation; between 1905-06 and 1910-11 the number of cotton mills companies registered in Bombay Presidency was 60 (See the Annual Reports on the working of the Indian Companies Act, 1882, Bombay); in Bengal the Banga Lakshmi Cotton Mills, Co. was registered in 1906 and the Mohini Mills Co. in 1908; the TISCO was registered in 1907; the Central Bank of India was founded by the Tatas in 1911.

[5] Clark's speech in the Council, March 22, 1912, Companies, May, 1914, No. 3.

JOINT-STOCK COMPANIES[1]

Year	Companies at work	Paid-up Capital Rs.
1884-85	694	20,63,58,440
1889-95	886	23,68,42,020
1894-95	1204	27,66,87,730
1899-1900	1340	35,43,87,750
1903-04	1489	39,71,67,520

Apart from Indian joint-stock companies, there were other companies, incorporated in England, with sterling capital. The momentum of foreign investment was sustained by these companies whose sole beneficiaries were British investors. Enormous surplus capital had accumulated, and British investors needed a sponge large enough to hold it. Foreign investment served precisely this purpose. The Government of India prpeared a provisional list of sterling companies in 1904. The list shows that 63 sterling companies were at work in India in 1904; these companies were registered between 1874 and 1903. Of these 30 were tea companies, 10 gold-mining companies, 11 railway companies. There were other sterling companies which had branches in India and employed a fraction of their capital in India, e.g., The Standard Oil Co., The Hong Kong and Shanghai Bank. There were 107 companies registered in England between 1874 and 1903 for business in India, but possessing no offices in the country. It seems that many of these companies had ceased to exist. Of these companies 30 were gold-mining companies, 6 tea companies, 3 rubber companies.[2] It seems that gold-mining, tea, coal, railways tramways were the favourite objects of British capital. There was only one iron and steel company—The Bengal Iron and Steel Co.—with a paid-up capital of £190,490 in

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[1] Statistics and Commerce, November, 1898, No. 840; September, 1904, No. 500.

[2] The list of the Sterling Companies is given in Appendix C. The paid-up capital of the Companies is not given in the list. Apart from Sterling Companies there were other foreign companies; the number of foreign companies (including sterling Companies) established outside India but working in India was 386 in 1914-15. See the Annual Report of the Registrar of joint-stock Companies, Bengal, 1914-15.

1902. Some of these companies, notably the Calcutta Tramways Co., Calcutta Electric Supply Corporation, East India Coal Co. reached substantial size in the subsequent period. The enormous profits made by the sterling companies in India flowed to England, and British shareholders had the pleasure of drawing annual dividends. In a remarkable passage Trevelyan describes the way of life of the British shareholders who were "detached from the responsible management of business", who lived in towns like Bournemouth and Eastbourne, who "had no relation to the rest of the community except that of drawing dividends and occasionally attending a shareholders' meeting to bully the management".[1] It is not fortuitous that foreign investment would be particularly attractive to mid-Victorian investors.

The growth of the Limited Liability Companies had important consequences. A new class of shareholders was born; they own, but do not participate in the economic activity of the concern. Another new category, the managers or directors, "who conduct but do not own" was also born.[2] Management was divorced from owner- ship. The "company promoter", "the broker" became familiar figures in cities and the Stock Exchange came into existence. Serious abuses had crept in the system of company management. The crash which hit Bombay in 1866-67 came as an exposure of fraudulent com- pany promoters.[3] There was the growth of "grave malpractices and fraudulent devices", of "bogus companies, false and misleading pros- pectuses, dishonest directors and promoters", so that the interests of the investors were adversely affected not too infrequently.[4] It seems that a high mortality rate prevailed. In 1895-96, 63 companies with a paid-up capital of Rs. 9,51,454, in 1902-03, 83 companies with a paid-up capital of Rs. 1,19,37,410 and in 1903-04, 74 companies with a paid-up capital of Rs. 87,27,040 ceased to work.[5] Many "mushroom companies" sprang up, particularly during the *Swadeshi* period;

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[1] G. M. Trevelyan, *English Social History*, pp. 578-79.

[2] John Strachey, *Contemporary Capitalism*, p. 35.

[3] The "cotton boom" ended in 1865; the "nineteenth century South Sea Bubble" burst; Premchand Roychand, the champion speculator, failed; the Bank of Bombay failed; hundreds of investors were ruined. See Minutes of Evidence, *Report of the Bombay Bank Commission*, PPHC, 15, 1868-69.

[4] Note of R. N. Mudhalkar, January 8, 1910. Companies, File No. 15, May, 1914. Mudhalkar took a prominent part in the work of the Indian Industrial Conference.

[5] Statistics and Commerce, November, 1898, No. 840; September, 1903, No. 552; September, 1904, No. 500. It is an interesting topic which needs more study.

they were promoted by speculators who had little desire of building up business.[1] Joint-stock companies sometimes lent money to individuals or corporate bodies and no restriction was placed on the directors' power of recklessly lending money to individuals.[2] The legal provision with regard to audit was rendered ineffective, as companies' accounts were sometimes audited by non-professional men; and auditors were sometimes "proteges of scretaries or Agents or Directors'.[3] Shareholders were scattered and generally apathetic, and they could not read prospectuses or balance-sheets, and regarded the money spent on the purchase of shares as of a nature of a loan and were "glad to delegate their powers to the promoter or promoters".[4] The shareholders' inertia proved the illusory nature of control theoretically exercised by "sovereign shareholders" over directors.

The *laissez-faire* spirit of the existing company law did not correspond to reality. The Indian Company Law had practically stood still since 1882, although there had been four amendments. The Government of India noted in their Despatch, dated 8th February, 1912, "while we accept the general principle underlying the English Law that Government should intervene as little as possible in the management of joint-stock companies and should rely principally on publicity for the protection of the public, we cannot but recognise that in India, where investors are less capable than in Europe of looking after their own interests, the State may reasonably be expected to take upon itself the initiative in some matters which in the United Kingdom would be left to the vigilance of the shareholder". It was emphasised that the Government should assume "increased powers of inspection" and also ensure improvement in the standard of auditing of companies' accounts.[5] The Despatch reveals the significant fact that the Government deemed it necessary to institute, in public interest, greater State control over the operations of private enterprise.

Clark introduced the Indian Companies Bill in the Council on

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[1] Letter from Dr. Rai Sunder Lal Bahadur, October 15, 1912; Companies, May, 1914. No. 3.

[2] Letter from Secretary, Punjab Chamber of Commerce, November 20, 1909; *Ibid.*

[3] Letter from Chairman, Indian Merchants' Chamber and Bureau, January 11, 1910, *Ibid.*

[4] Letter from B. C. Keenedy, July 9, 1912, Companies, May, 1914, No. 3.

[5] Companies, May, 1914, No. 15.

March 22, 1912. It was based on the English Act of 1908. It was intended to produce "a feeling of greater security" not only in Indian investors but also "in the breast of the British investor whose capital we wish to attract to this country". The Government aimed at "minimum of state interference compatible with the due protection of the investor". The "stringent clauses", as they came to be called, referred to the appointment of a Government inspector when "an unsatisfactory state of affairs is disclosed" in company management, the appointment, remuneration and duties of auditors, and the filing of balance-sheet together with auditor's report with the Registrar. Private companies were recognised for the first time. Foreign private companies (incorporated outside India) were required to file balance-sheet.[1] Private companies were exempt from the obligation to publish statements of their financial position. This form of company enterprise became popular, although firms which needed large capitals were generally public companies.

For Clark it was no smooth sailing. It could not be. Private enterprise (to be more precise, certain sections of it) did not welcome State control. The Bengal Chamber objected to the provision of filing a balance-sheet together with auditor's report. They argued that it would lead to "disclosure to the public of intimate and confidential matters." The Chamber also pleaded for the exemption of private companies from the duty of filing balance-sheets with the Registrar.[2] It is significant that the Government of Bengal had no difficulty in accepting the Chamber's view.[3] The Bombay Chamber strongly opposed the clauses which made it obligatory for foreign private companies (incorporated outside India) to file a balance-sheet and they raised the bogey that it would "tend to a restriction of trade".[4] Sita Nath Ray, representing the Bengal National Chamber of Commerce, displayed boundless energy in fighting the "stringent clauses" and moving a series of amendments, so that Clark angrily retorted, "His idea is to place as few restrictions as possible on the formation of companies. This seems to me a dangerous policy ...... the duty of the Government as regards the best way of encouraging the investment of capital in this country, is to make it as safe as possible".[1]

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[1] Speech of Clark, member in-charge of Commerce and Industry Department, March 22, 1912. Companies, May, 1914, No. 3; also see the Indian Companies Bill.

[2] Letter from Bengal Chamber of Commerce, August, 15, 1912, *Ibid.*

[3] Letter, dated November 28, 1912, Companies, May, 1914, No. 3.

[4] Companies, Oct., 1913, No. 1-3,

Despite the opposition (which was only "sound and fury") of private enterprise, the Indian Companies Act was passed on March 25, 1913. The Government was immediately faced with another intractable question. When the Indian Companies Bill was being drafted, the Government discovered that "an Indian Companies' Bill which leaves out Managing Agents is on a par with Hamlet without the Prince of Denmark".[2] The Select Committee on the Indian Companies Bill unanimously accepted "the principle that there is room for the imposition of certain restrictions in connection with the management of companies by Managing Agents".[3] Before we deal with the endeavours made by the Government to control and regulate the Managing Agency system, we should know what led to the growth of the system (which, as Tyson noted, was a "British device" and remained confined to "British India") and how it worked.

The origins of the managing agency system go back to the second half of the eighteenth century when the agency houses, founded by the ex-servants of the Company, flourished in the Bengal Presidency and became so powerful that they controlled internal trade, financed indigo and sugar industry, secured the Government contracts, controlled the three banks and the four insurance companies at Calcutta.[4] The agency houses, which played an important rôle in the early history of British capitalist enterprise in India, failed in 1833-34. Their fall coincided with the passing of the Charter Act of 1833 which marked the ascendancy of Industrial Capitalism in England. The managing agency system developed on the ruins of the agency houses; it "could rely on free import of surplus capital of England and on larger and cheaper banking facilities".[5] The managing agency houses were founded by British businessmen, as their forefathers had built the agency houses. The British investors found it to their advantage to depend on them. As Meugens, an apologist of the system, put it, "the high cost of living and the necessity for long leave, combine to render the home system of employing individual whole-time secretaries and managers impossible, but the managing agency system admits of economical management and continuity of policy".[1] In his note on the managing agency system Enthoven, who as the Secretary of Commerce and Industry Department had to study the subject, explains the rapid growth of the system. The managing agency firms supplied "much of the capital with which the company is started". They also supplied stores, machinery and equipment of the factories; they supplied coal for the factories; they disposed of the produce which the factories turned out.[2] In short they supplied capital and managerial personnel which were much in demand in the country.

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[1] *Gazettee of India,* Part vi, April 12, 1913.
[2] Companies, September, 1913, No. 1.
[3] Companies, September, 1913, No. 66-68.
[4] For an account of the agency houses See A. Tripathi, *Trade and Finance in the Bengal Presidency,* 1793-1833.
[5] Tripathi, *Op. Cit.,* pp. 240, 249-50 also see Basu, *the Managing Agency System,* pp. 1-5.

The managing agency system also developed and spread in the Bombay Presidency. It seems that the Indian industrialists eagerly adopted the system and soon became adept in it. The Oriental Mill, promoted by a Parsi merchant, was converted into a joint-stock company in 1858, and it came to be managed by Messrs. Framji and Co. Thus Messrs. Framji and Co., became the managing agent of a cotton mill.[3] Currimbhoy Ibrahim, a Bombay merchant who made money in the China trade, founded the Currimbhai Mills in 1886; his firm was in 1913 the managing agent of 5 cotton mills of Bombay.[4] The Tatas promoted the Tata Iron and Steel Co. ; Messrs. Tata Sons and Co., became the managing agents of the Company when it was registered in 1907. The promoters themselves became the managing agents. Messrs. Tata Sons & Co., acted as the managing agents of 3 cotton mills of Bombay in 1913.[5] It should be noted that for the Indian industrialists there was no difficulty in employing individual whole-time secretaries or managers, still they adopted the managing agency system which helped them, as we will pressently see, to establishing "dynastic" domination over the companies managed by them.

The Government adhered to the *laissez-faire* doctrine; the freedom of the managing agents was not restricted, so that they become very powerful between 1880 and 1913 and established their grip over the major industries. In fact, the *laissez-faire* spirit of company law partly explains the smooth sailing of the system. In 1913 the managing agency firms of Calcutta managed 116 coal mines, 43 jute mills, 89 tea gardens, 19 railway and steam navigation companies, 6 cotton mills and 42 miscellaneous joint-stock companies.[1] In Bombay the managing agency firms, mainly Indian, managed 62 cotton mills.[2] This was the reality which the Government had to grapple with. The Indian Companies Act was passed ; the managing agency system was not brought within the purview of the Act. But the matter of controlling and regulating the system could not be indefinitely postponed. Clark averred that the Government should give "very careful consideration to the question" ; opinion had been expressed "pretty strongly in some quarters" that the powers of the managing agents over the fortunes of the companies managed by them "are insufficiently controlled" and that the powers were sometimes exercised "to the detriment of the shareholders".[3] Enthoven in his note focussed attention on the necessity of controlling the system in public interest. The managing agency firms sometimes purchased jute, cotton, coal or other commodities "without indicating, at the time when the transaction is completed, whether they purchased for their firms or for one or more of the companies" managed by them, and it was not an uncommon practice "for them to resell the goods when prices rose and thus secure handsome profits", or to "represent the transaction as effected on behalf of one of the managed companies" when the market became unfavourable. They lived on "commissions of uncertain extent". Their position differed from that held by directors in England who "could not be allowed to occupy such a position". It was not an uncommon practice that the directors of companies were not independent of the managing agency firms; in fact, several companies "possessed two Directors, one a member of the Managing Agents' firm".[4]

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[1] Speech of Meugens in the Council, March 17, 1914, Companies April, 1914, No. 85-124, Kirkman Finlay of Finlay, Muir and Co., Calcutta, traded in tea from China; the firm became agents for Nonoi and Sootea estates in 1873; by 1881 they were agents for 16 gardens; Bengal Iron and Steel Co., was registered in England in 1899; Hoare Miller and Co., were appointed managing agents.

[2] Note of R. E. Enthoven, December 28, 1912, Companies, September, 1913, No. 66-68.

[3] S. M. Rutnagur, *The Cotton Mills*, p. 9.

[4] *Capital*, January 2, 1913.

[5] *Capital*, January 2, 1913.

The Commerce and Industry Department drafted a Bill to amend the Indian Companies Act, 1913. On April 10, 1913 the Bill was forwarded to the Secretary of State.[1] The Bill was published in the Gazette of India on April 26, 1913.[2]

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[1] *Commerce*, March 12, 1913.

[2] *Capital*, January 2, 1913. The managing agency firm took the form of a partnership, a private or public limited company.

[3] *Gazette of India*, Part VI, February 1, 1913.

[4] Note of R. E. Enthoven, dated December 28, 1912. Commission was sometimes charged on "the production or out-turn basis".

The object of the Bill was to supplement the Indian Companies Act, 1913. It had several provisions. In the first place, every Company should have directors. Secondly, the majority of the directors "shall be independent of the Managing Agents, exception being made in the case of private companies and of companies in which the Managing Agents themselves hold a predominant voting power". Thirdly, directors would be required "to disclose their interests in contracts" to the other directors, and, in the case of contracts appointing managing agents, or any variations of such contracts, to the shareholders. Fourthly, in the case of contracts by the managing agents of a company, other than a private company, in which "the company is an undisclosed principal", "a memorandum in writing of the terms of the contract" would have to be made and communicated to the company.[3]

The Bill was circulated to the Local Governments and Administrations, the Chambers of Commerce, business organisations and business men. There was a consensus of opinion among the Local Governments and Administrations that the wide powers of managing agents should be curbed in public interest. We will briefly refer to some of the letters which reveal the deep-seated evils of the system.[4] The Registrar of Joint-stock Companies, Madras, noted that the terms of contract between the companies and the managing agents "are not known", and that the selection of directors by shareholders "will serve no useful purpose if important powers relating to management are vested in the hands of the Managing Agents.[5] The Registrar of Joint-stock Companies, Bombay, referred to the "almost absolute control" enjoyed by managing agents, secretaries, treasurers or agents in the management of companies ; the managing agents sometimes held the majority of the shares.[6] H. McPherson, Secretary to the Government of Bihar and Orissa, Revenue Department, suggested that director's private interest in any company "should be made known to the general body of shareholders, instead of to the directors only", and that the period of a managing agent's tenure of office "should be limited by legislation".[1] The Chief Secretary, Government of Bombay, supported the provision of an independent board of directors, which "will have some deterrent effect" on the managing agents.[2]

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[1] Letter to the Secretary of State, April 10, 1913, Companies, September, 1913, No. 66-68.

[2] *Ibid.*

[3] See the *Statement of Objects and Reasons,* dated April 25. *Ibid.*

[4] Letters received from the Local Governments and Administrations, Chambers of Commerce, business organisations and businessmen will be found in File No. 1 of 1913, CI—Companies, April, 1914.

[5] *Ibid.*

[6] *Ibid.*

We will now refer to some of the letters of business organisations and the Chambers of Commerce. The Bhatia Mitra Mandal of Bombay severely criticised the managing agents of the cotton mills of Bombay. It was pointed out that "the overwhelming majority" of the directors of the cotton mills "consisted of Managing Agents' near relations or friends", and hence "no independent management" was possible. "Vested interests" would raise objections but the interests of shareholders and of investors "will be safeguarded" if the Bill was passed.[3] The Bombay Presidency Trades Association noted that the practice of employing managing agents was "contrary to the spirit of joint-stock enterprise"; the Directors had "little or no actual responsibility".[4] The Millowners' Association, Bombay opposed the provision in the Bill of "compulsory appointment" of directors in all companies.[5] The Indian Merchants' Chamber and Bureau, Bombay, attributed the success of the cotton mills industry to the services rendered by the managing agents and noted that the Bill "will come in the way of the progress of the Mill Industry of Bombay".[6] The Grain Merchants' Association of Bombay, the Bombay and Madras Chambers of Commerce opposed the Bill ; their main target of attack was clause 83(c) of the Bill.[7]

But the toughest opposition came from the Bengal Chamber of Commerce. The suggestion that every company should have directors emanated from the Bengal Chamber, but it seems that it was anticipated that "the compulsory Directors would be partly furnished from the members of the Managing Agent's firm".[8] The proposal of the Government was that the majority of the Directors "shall be independent of the Managing Agents' firm". This proposal was severely attacked by the Bengal Chamber who exerted much pressure to bear upon the Government. When Clark offered to go down to Calcutta to talk over "the vexed clauses", the Bengal Chamber refused "to discuss them with me".[1] In his speech in the Council on the Indian Companies Bill of 1913, Clark attached much significance to the fact that the attacks on the proposals "emanate from one quarter"; and it was Calcutta. Clark noted, "what is greatly exercising Calcutta appears to leave Bombay and other commercial centres unmoved".[2] In their letter dated September 4, 1913, the Chamber urged that "the question of postponing the Bill for a few years should be seriously considered".[3]

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[1] *Ibid.* It is significant that McPherson anticipated the necessity of more stringent rules to curb the managing agents.

[2] *Ibid.*

[3] *Ibid.*

[4] *Ibid.*

[5] *Ibid.*

[6] *Ibid.*

[7] *Ibid.*

[8] Note of R. E. Enthoven, dated December 28, 1912. CI—Companies, September, 1913.

The matter was brought to the British Parliament; Sir J. D. Rees referred to the Bill which "closely concerns the interest of business firms partly or wholly domiciled in England"; "certain of its provisions are, in the opinion of businessmen, likely to have injurious effects both in India and in this country, particularly those relating to directors"; he suggested that "its passage into law may in the meanwhile, with advantage, be postponed".[4]

The pressure compaign proved effective; the Government yielded to it. In the meeting of the Select Committee the deletion of clause 83(c) was moved by Monteath of the Bengal Chamber. Clark had already made up his mind to drop it. The "vexed clause" was at last dropped.[5] The Government proved powerless before the powerful opposition of the *dramatis personae* of Clive Street.

Clark moved the Indian Companies (Amendment) Bill in the Council on 24th February, 1914. Sir Ibrahim Rahimtoola displayed his parliamentary skill in moving an amendment for the re-insertion of the "vexed clause" dropped by Clark. Ibrahim spoke with passion and conviction. He did not idealise the reality. He did the type of frank speaking which the Council needed at the moment. He argued: "You are handing over the shareholders, even when they are in a majority, to the tender mercy of the managing agents who will be either the sole directors or in a majority on the Board". The managing agents as directors could withhold or give the smallest possible dividend. They would be "in sole charge of the Company and all its books, vouchers, safes". From the inside knowledge they had on the working of a company's business, they could "manipulate the market value of the shares of the company on the stock exchange". The motion came "in so enticing a guise" that Clark fumbled. He was certainly not at his best. Everybody knew that he had bowed to the pressure of the Bengal Chamber. He did not like that Ibrahim should take "a very gloomy view of the commercial morality of managing agents as a class". (Only a few months back neither he nor Enthoven did take a very favourable view of the managing agents' morality.) His main argument was that the question of making an independent directorate compulsory by law could be postponed, "especially in view of the feeling to the contrary which is held in commercial circles". Fazulbhoy Currimbhoy, himself a big businessman, tried to defend the managing agents on the ground that they were efficient, so that "80 per cent of the successful and flourishing industrial concerns are in the hands of firms of managing agents".[1] It did not occur to him that managing agents could be efficient, but could also practise fraud and seek personal enrichment which concentration of powers almost invited.

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[1] Speech of Clark in the Council, dated March 5, 1913. *Gazette of India*, part VI, 1913.

[2] Speech of Clark, March 15, 1913 *Gazette of India*, Part VI, 1913.

[3] CI—Companies, April, 1914,

[4] *Ibid.*

[5] Companies, August, 1914, No. 7. Sir Ibrahim wrote a Minute of Dissent. Clause 83(c): "When a firm is manager of a company other than a private company then, notwithstanding anything in the articles of the company, there shall not be less than three directors of the company, and the majority of such directors shall be persons who are not members of such firms".

Sir Ibrahim's motion was lost, and the Indian Companies (Amendment) Bill (Act No. XI of 1914) was passed on March 18, 1914.[2] For over half-a-century the managing agents had enjoyed unfettered freedom. The system was not brought within the purview of the Indian Companies Act, 1913: "Hamlet without the Prince of Denmark". A bill to amend the Indian Companies Act, 1913 was brought in 1914, which was, as Clark noted, "a very modest beginning" in the direction of controlling the system. The Bengal Chamber organised a pressure campaign and played for time. Sir Armstrong of the Bombay Chamber "deliberately abstained himself from the Select Committee meetings".[1] The managing agents carried the day. As Kenrick, the Advocate-General, put it, "The elimination of Section 83(c), which was the keynote of the Bill, cuts directly at the whole object of the legislation, and in my opinion diminishes the practical utility of some of the remaining clauses almost to vanishing point".[2] Nevertheless, Act No. XI of 1914 was passed. Once the path of control was trodden, it was difficult to halt; and the Government had to grapple with reality and impose restrictions on the managing agents by passing Act XXII of 1936.[3] Meanwhile the managing agents were left free to consolidate their position and extend their empire.[4]

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[1] Companies, April, 1914, No. 85-124.

[2] 7 Ayes and 44 Noes. Those who voted for the motion: Sir Ibrahim, V. R. Pandit, Vijiaraghavachariar, Mir Asad Ali Khan, Umar Hyat Khan, Raja Jai Chand, Pandit M. M. Malaviya. Indian members who voted against: Sir Ali Imam, Fazulbhoy Currimbhoy, Sita Nath Ray, Maharaja Manindra Chandra Nandi, Maharaja Ranjit Sing, Raja Abu Jafar, Maharaja Kumar of Tikori, Sarder Deojit Sing, G. M. Chitnobish. *Ibid.*

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[1] See R. E. Enthoven's Note, dated October 17, 1914, Companies, December, 1914, No. 1-3.

[2] Letter from G. H. B. Kenrick, Advocate-General, Bengal, February 12, 1914. He took exception to the fact that he had no opportunity "of expressing my views to Government, before the meeting of the Select Committee". Companies, August, 1914, No. 7.

[3] The Civil Court Manual (Central Acts), Madras Law Journal Office, 1952.

[4] The Industrial Commission was impressed with "the high financial prestige" of the managing agency firms; the Commission also noted that they were "unduly conservative in their methods of business"; "they have been inclined to develop commerce rather than industries and have thus been at times less helpful than might have been the case, in clearing the way for continuous industrial progress". *Report of the Indian Industrial Commission,* (1916-18), p. 9.

CHAPTER VIII

CONCLUDING REMARKS

In the period 1858-1914, Government spending was a factor of crucial importance in India's industrialisation. Lord Ripon's Government took some effective measures in the direction of substituting Indian manufactures for European manufactures; and Government spending became henceforth a factor in helping the growth of Indian industries. The annual average value of Indian manufactures of the years 1882-83 to 1913-14 was Rs. 1,08,80,634; during the years 1889-90 to 1908-09, the annual average was Rs. 1,28,10,825. It is not fortuitous that Indian manufacturers eagerly expected relaxation of the stores purchase rules; when the Stores Rules were relaxed in 1909 (when the Liberals were in power in England), the Indian Industrial Conference hailed the measure as "a distinct advance in the policy of the Government towards the encouragement of indigenous industries". It is undeniable that Government spending stimulated the development of some Indian industries, notably coal, paper, woollen and leather industries. It is difficult to know whether the indents transmitted to the India Office were always carefully examined in detail; the thousands of indents transmitted during the period 1858-1914, could not be reviewed. The Stores Committee (1906) reviewed the indents sent during the year 1904-05, and the findings of the Committee were revealing. Indents were sent to the India Office of articles which were obtainable of local origin; and the articles which could have been obtained locally included, apart from iron and steel work, portland cement, paints, oils, turpentine, cordage and rope, cotton and woollen goods, chemicals.[1]

The objective of reducing the sterling payments in England for stores which the Indian Government had constantly in view from

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[1] *Report of the Stores Committee* (1906), p. 24. The Stores Committee made particular mention of the sources of supply of Indian manufactures: the woollen mills and leather factories of Cawnpore, the cement factory of Madras (owned by Messrs. Arbuthnot and Co.), the Shalimar factory which successfully undertook the manufacture of paint, the Shalimar Ropery (owned by Messrs. Ahmuty and Co.) and the Ganges Rope Factory. *Ibid*, pp. 29-30.

1872-73 was not reached. The annual average value of "Stores for India" of the years 1866-67 to 1899-1900 was £ 1,270,433; during the years 1900-01 to 1913-14 the annual average was £ 1,745,903. The expenditure on "Railway Stores" also considerably increased from the last decade of the nineteenth century. It was not fortuitous. The sterling payments for stores could not be substantially reduced until "iron work and machinery" was manufactured on a large-scale in India. And it was here that the weakness of India stood out.

As the development work of the Government began to proceed, there was generated a large and growing demand for iron and steel and for an extensive range of engineering goods. Government had become the single biggest purchaser of "iron and steel work". But almost throughout the nineteenth century Indian iron industry, which had to face foreign competition, could not be the beneficiary of Government spending. Lord Ripon's Government anticipated the importance of developing the iron industry in India, especially in view of the needs of railways and water-works, and proposed some tangible concessions to the Barakar Iron Works. His proposals were negatived by the Secretary of State. In 1896 the Bengal Iron and Steel Co. (which was incorporated in England) was offered a contract "for the supply of 10,000 tons of pig iron and castings annually for 10 years", but the rates were "to be 5 per cent below English rates". In 1904 the Bengal Iron and Steel Co. embarked upon the manufacture of steel, but Government purchase was insignificant, and the steel works had to be closed in 1906. The experience of the Tata Iron and Steel Co. shows to what extent Government spending could stimulate the nascent iron and steel industry. The Government guarantee to purchase 20,000 tons of rails annually (the order amounted to some £ 160,000) stood the nascent industry in good stead; and Messrs. Tata Sons and Co. acknowledged in gratitude "the very generous concessions to our enterprise". Of course, the entrepreneurial ability of the Tatas must not be minimised. Fortune favoured the Tatas; the War came in 1914, and it "poured money into their coffers".

The relaxation of the Stores Rules, as envisaged in the Resolution of 1883, was not extended to the Indian engineering industry which was in the initial phase of development and had yet to build a market in India in the face of foreign competition. The Engineering and Iron Trades Association (in which foreign and Indian firms were organised) could be seen conducting a sustained movement even up to 1914; they memorialised the Government of India; their representatives called at the India Office and memorialised the Secretary of State. But relaxation was slow in coming. In 1891 the Government of India permitted the purchase of "less important manufactured articles of iron and steel made up in India"; the whole of the supplies in the case of Railways was excluded. In 1897 the list of articles of iron and steel work which the Indian firms could supply was extended, but the prohibition placed against the purchase in India of articles required for State Railways, or "the first equipment of large engineering projects" was retained. In 1901 Indian firms were permitted to supply rolling stock for the Railways, but "wheels, axles, springs and drawgear" would have to be obtained through the India Office. In 1905 the Railway Board announced that "tenders for twenty-five per cent of all goods stock required for State Railways" would be called for in India. The Stores Committee (1906) sharply criticised Government policy. The Committee felt that Indian firms were handicapped by "the inadequacy" of and "lack of continuity" in Government orders; and from the mass of evidence collected by this Committee it seems that their criticism was well-founded. The publication of the Report was prohibited by John Morley; nevertheless, new stores rules were issued in 1909, 1912 and again in 1913. But the rumblings of discontent of the engineering firms could be heard till the War of 1914 which opened up new opportunities for their growth.[1] Many of the Indian firms had, however, increased their business since 1882-83, and it seems that the firms of Bombay and Calcutta were more dependent on private demand than on Government demand; private demand for engineering goods vastly expanded from the 80's due to the large requirements of the Port Trusts, Municipalities, jute mills, cotton mills, and tea gardens. It is noteworthy that some of the engineering firms whom we meet in this period were later to become very important.[2] Though private demand was large and growing, the engineering industry had to depend on Government orders for wagons and bridge-materials. It follows, therefore, that the development of the engineering industry was closely linked with the railways.

In the period under discussion the "Home Manufacturers", who figure prominently in the despatches and reports of the Government, exerted great pressure on the policy makers at the India Office ; a full study of the power and influence of these "pressure groups" has yet to be undertaken. It is well known how powerful Lancashire was as a "pressure group" ; in 1882 all import duties, except on salt and liquor, were abolished and an important source of revenue was sacrificed in the interest of this group ; and when financial difficulties led to the re-imposition of import duties in 1894, the notorious Cotton Excise Duty was imposed on Indian cotton goods to appease them. The "Home Manufacturers" of iron and steel were no less powerful; in the decade 1870-80 British manufacturers produced half of the world's pig iron and over one-third of the wrought iron ; from 1870 to 1886 Britain was the most important producer of steel in the world. The "Home Manufacturers" supplied, in the main, India's requirements in iron and steel and engineering goods. In 1863 the duty on imported iron was reduced from 10 to 1 per cent. Machinery was on the free list. Trevelyan's minute, dated June 13, 1863, set out explicitly the objective of Government policy: "It is a misdirection of the resources of India to enter into competition with England in this branch of industry". When Lord Ripon's Government proposed some concessions, very limited in their nature, to the Barakar Iron Works in 1882, the "Home Manufacturers" demurred. The *Economist* lent its support to them. Lord Ripon's proposals were negatived by the Secretary of State. In 1896 when the Government offered the Bengal Iron and Steel Co. a contract "for the supply of 10,000 tons of pig iron and castings annually for 10 years", the rate of 5 per cent below English rates was fixed, and this was done, in the words of F. R. Upcott, then Government Director of State Railways, "to disarm the home manufacturers' opposition". The Stores Committee (1906) alluded to "the unfair attitude" shown by the Home Board of the Bombay, Baroda and Central Indian Railway which was "singularly unfortunate in its probable effect on local enterprise". It is significant that the India Office endorsed the statement of the Home Board ; Minto's Government rejected it.[1]

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[1] Evidence of Messrs. Richardson and Cruddas, Minutes of Evidence, Vol. IV, Indian Industrial Commission (1916-18).

[2] For example, Messrs. Jessop and Co., Richardson and Cruddas, Burn and Co., Martin and Co., Balmer Lawrie and Co.

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[1] Grant Burl, Director General of Stores, India Office, prepared a long memorandum, dated August 14, 1907, criticising some of the points raised by the Stores Committee (1906) in their Report ; the Government of India, in their note on the remarks of Grant Burl, supported the major premises of the Stores Committee ; Minto's Government in their despatch, dated March 26, 1908, rejected the views of the Home Board of BBCIR (CD—Stores, 1908, Pro. Vols.).

It seems that the "Home Manufacturers" persistently under-rated the capacity of Indian firms to turn out iron and steel work, especially railway wagons and bridge materials. They were not prepared to give the Indian firms a fair trial; the Indian market was to remain in their grip. The India Office repeatedly alluded to the "inefficient standards" of Indian manufactures. The Stores Committee, however, came to a different conclusion. The Committee recommended relaxation of the stores rules in view of "the immediate ability" of some of the Indian firms "to deal with orders of larger magnitude than they have hitherto received".[1]

It is undeniable that the period 1858-1914, witnessed the beginnings of a shift in the economic situation. There was a remarkable development of capitalist industry in some regions. In a number of industries technical developments had progressed sufficiently far to provide a basis for production of a factory type; capitals running into several thousands were being invested in manufacturing industries. Joint-stock enterprise, which represented a new type of business organization, made much progress during the closing decade of the nineteenth century.[2] Company organization with limited liability had become popular; the paid-up capital of joint-stock companies rose to about 64 crores in 1910-11. The development of coal industry, iron and steel industry, and the engineering industry, though these were yet in the initial phase of development, opened up new vistas for India's industrialisation. The cotton textile industry, for which a mass market already existed, had reached a substantial size,[3] and since its inception it was financed mainly by Indian capital. In coal industry Indian capital was fairly active; the Indian Mining Federation was founded in 1913. The iron and steel industry of Jamshedpur was an Indian enterprise. The Tatas founded the

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[1] *Report of the Stores Committee* (1906), pp. 26-28; also see the Evidence of Merchants and Manufacturers.

[2] The number of Joint-Stock Companies was 1,572 in 1897-98 with a paid-up capital of Rs. 33,123,322; over 49 per cent of the paid-up capital was invested in mills and presses, chiefly for working or pressing cotton, jute, wool, and silk; the greater number of the companies were registered in Bombay; next came Bengal. The number of banking and loan companies was 389 with a paid-up capital of Rs. 4,317,542. CD—Statistics and Commerce, No. 840, November, 1898, Pro. Vols. Between 1900 and 1910 105 Indian joint-stock coal companies were registered, the total number of such companies being 128 in 1910.

[3] The capital invested in the cotton mills was about £ 13,500,000; they gave employment to 350,000 hands. *Imp. Gazetteer of India,* Vol. III (1908), p. 196.

Central Bank of India in 1911. The Indian *bourgeoisie* was not a decaying, but a rising class in 1914. The managing agency system was a leading weapon in their hands to extend their grip over a number of industries.

During the period 1858-1914, foreign capital, mainly British capital, held the field. The large majority of India's large-scale industries were foreign-owned, foreign-financed and staffed by foreign technical personnel. Foreign capital was also active in commerce, and a large number of mercantile houses, who dealt in imported European stores, had been founded; some of them were branches of well-established English firms. Foreign firms repatriated their enormous profits outside India, so that very little capital was left that could be ploughed back into industries within India. They had a tendency to curtail the investment of capital for the extension and re-equipment of factories. But this does not diminish the importance of foreign capital or of the industries which owed their origin to foreign enterprise. In the Industrial Conference, held at Poona in 1891, Ranade made an interesting speech on the rôle of foreign capital: "The fact is we have no resources, and we want the superfluous wealth of England to shower its abundance on our parched up land. I do not think we cease to be patriotic by using English capital to benefit ourselves .... Where would our railways and our canals, our mills and factories be but for English enterprise and skill and capital?"[1] It is undeniable that British capital did play a positive rôle in developing some Indian industries, such as coal mines, jute mills, paper mills, woollen mills, leather factories, tea gardens. But it seems that British capital had a tendency to shy away from iron and steel industry and engineering industry. In 1874 Messrs. Rutherford & Co. formed the Bengal Iron Works Company with a capital of £ 100,000 only. In 1875 Messrs. Burn & Co. started operations at Barakar, but abandoned the project after a few months. Messrs. Jardine Skinner & Co. possessed a concession in Bengal "over the most magnificent micaceous iron deposits," but they abandoned the project of building iron and steel works.[1] The East India Iron and Steel Syndicate, registered in London in 1901, secured prospecting rights in Bisra and Chanda, but ultimately abandoned the project of establishing "a large iron and steel works" in the state of Gangpur. The Bengal Iron and Steel Co., when it was incorporated in England in 1889, had a capital of £150,000 only; by 1894 the original capital was expended, and the Company had to approach the Government for loans and receive a rebuff. The Tata Iron and Steel Co., when it was registered in 1907, had to raise a capital of £16,30,000. Experts like Molesworth, Schwarz and Mahon invariably pointed out that the iron and steel industry, to be successful, must possess large capitals and be on a large-scale. The capital sunk in the engineering industry was also small; it was estimated at £3,500,000 in 1912. It is a commonplace that the engineering industry needs expensive capital equipment.[2] It is noteworthy that the market for iron and steel and engineering goods was large and growing; but "tangible market demand already existing or visibly coming into existence" could not provide any strong inducement to foreign capital to undertake the heavy capital expenditure which the development of iron and steel and engineering industries entailed. The Government of India laid much emphasis on the importance of encouraging "the best English firms" to open branches in India, so that the standard of Indian manufactures might be raised.[3] But "the best English firms" did not come in to develop the engineering industry during the period under review. The firms that existed in India preferred, as the Indian Industrial Commission noted, "a safe profit from trade or from such established industries as Jute and Cotton manufacture, to a doubtful return from such ventures as metallurgical and chemical manufactures".[4] With the development of railways and ports and docks, trade and commerce expanded, and the foreign mercantile firms had before them the prospects of fattening on profits made through commerce. The prospect of "a safe profit from trade" cooled their interest in building heavy industry which entailed large capital investment. The Indian iron and steel industry and the engineering industry remained weakly developed before the War. India remained overwhelmingly dependent on foreign imports for iron and steel and for an extensive range of engineering goods and for machinery. This lends colour to the view that India's industrialisation was taking place slowly and in a lop-sided fashion before the War. The War brought to the fore "the dangerous dependence" of India on the import of machinery and of engineering goods, and of managerial and technical personnel. It may be said, therefore, that India's economic growth was rather slow, although there was considerable investment of foreign capital.

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[1] Ranade's speech at the Indian Industrial Conference at Poona in 1891, CD—Accounts and Finance, August, 1892, B. Jenks states that something like one hundred and fifty million pounds of British capital were invested in India between 1854 and 1869; during the seventies British capital moved to India at the rate of about 5 million pounds a year. Jenks, *Op. Cit.*, p. 225. Sir George Paish estimated (1909-10) British capital investment in India and Ceylon at £ 365 million; H. E. Howard estimated it at £ 475 million (1911). R. P. Dutt, *India To-day*, pp. 116-17.

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[1] Note of C. L. Griesbach, CD—Coal and Iron, March, 1901, B. The concession was in Bengal (north of Porahat); the Raniganj coal fields were near.

[2] The capital invested in tea industry was estimated at £25,000,000 in 1902; in jute industry it stood at about £ 13,000,000 in 1913.

[3] Despatch to the Secretary of State, August 28, 1913. CD—Stores, 1913, Pro. Vols.

[4] *Report of the Indian Industrial Commission* (1916-18), p. 5.

The *laissez-faire* policy of the "Home Government" was extended to India. Some of the financial despatches of the Secretaries of State were models of *laissez-faire* policy, not of sound advice. Such expressions frequently occur in the despatches: Indian industries must not be relieved "by artificial means from the natural competition of other countries"; it would be "inexpedient for the Government to enter into industrial enterprise". Lord Ripon's proposals of purchasing the Barakar Iron Works were opposed by the Secretary of State, and sanction was given "in deference to your urgent wish". The Secretary of State cavilled at the proposal of the working of the Umaria Coal mines by the Government and averred that the State must avoid "commercial undertakings". Rendel's suggestion of expanding the railway workshops in the direction of self-sufficiency was rejected. The movement to encourage Indian industries by means of pioneer factories received a check when Lord Morley issued "a damning despatch" on July 29, 1910. These are some instances indicative of the influence of a dogma on important policy matters—a dogma which frequently came into conflict with reality.

The *laissez-faire* policy cramped public investment in industrial undertakings; capital outlay on the Barakar Iron Works, Government coal mines, pioneer factories, railway workshops was on a small scale. Capital outlay on railways was heavy despite financial difficulties, and here *laissez-faire* did not stand in the way. It is noteworthy that Government had not been chary in advancing large sums of money as loans to Port Trusts for the maintenance and extension of ports and docks. There was large public expenditure on civil buildings and military works. In fact, military expenditure was large and growing. Nevertheless, state action stimulated industrial development. The railway system was to become "the forerunner of modern industry" in India. It is sometimes forgotton that the re-establishment of the iron industry at Barakar, the premier iron works of India, was due very largely to the stimulus of Government action. Government policy was influenced by the needs of railway building which was largely assisted by the State in the form of free grants of land, and offer of guarantee of interest on capital. The expenditure on State Railways was also large. The State-operated Barakar Iron Works (1882-1887) achieved some measure of success in the production of pig iron and iron castings; the annual output rose to 7,000 tons. It should be remembered that previous experiments to manufacture iron at Porto Novo, Burwai, Kumaon, and at Barakar had ended in failure. The prospectus issued by the Bengal Iron and Steel Co. is a proof of the success achieved by the Barakar Iron Works. Similarly, some of the coal mines of India were worked and developed by the Government, and here also the needs of State Railways determined Government policy. The ordnance factories, railway workshops, canal workshops, postal workshops, harness and saddlery factories introduced new processes of production and helped to create a body of skilled labour in India. Indian workers shaped well when properly trained by European experts. The Cossipore Ordnance factory successfully undertook the manufacture of steel. In 1899 Mahon's report came out. In 1901 Jamshetji was discussing the prospects of steel industry in India with Lord George Hamilton. In the same year the Cossipore factory "is already engaged in rolling steel of many sections". The manufacture of steel was also successfully undertaken in the Jamalpore railway workshops. Events moved quickly, and in 1907 the Tata Iron and Steel Co. was founded. The pioneer factories of Madras achieved limited success; nevertheless, it points to the necessity of vigorous Government action to stimulate and accelerate the growth of those industries in which private enterprise was not likely to invest capital.[1]

A study of the letters, memorials and resolutions of the engineering firms and the Chambers of Commerce throws a good deal of light on the behaviour of private enterprise during the period under discussion. It seems that private enterprise was stubbornly opposed to state enterprise and state control. When the state-operated Barakar Iron Works, which was in charge of Schwarz, achieved some measure of success in the production of pig iron and iron castings in 1884-85, Messrs. Jessop and Co. wrote panicky letters to the Government. In 1889 Messrs. Jessop and Co., Burn and Co., John King and Co., Morrison, Dewar and Co. petitioned the Government of India urging restriction of operations of the Barakar Iron Works. When Mahon's report came out in 1899 and his proposal of founding a large-scale steel works under direct state agency was being discussed in the Public Works Department, the Bengal Iron and Steel Co. wrote a long letter pointing out that "such an enterprise (if encouraged) would seriously jeopardise" their interests.[1] When the pioneer factories had achieved very limited success in the manufacture of aluminium vessels, chrome leather and shawls, the Chairman of Madras Chamber of Commerce informed the Government that they were "unanimously strongly opposed" to the floatation of industrial companies by the Government. The Government brought a Bill in 1913 in order to regulate and control the managing agency system. The Bengal Chamber of Commerce threw the gauntlet down and carried on a pressure campaign against it, so that the Government retreated and withdrew the important provisions of this Bill. Private enterprise, however, urged the Government for relaxation of the stores purchase rules, and there was no want of zeal or vigour in their efforts.[2]

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[1] N. B. Saklatvala of Messrs. Tata Sons and Co. specified some industries in which Government help was deemed to be essential: Shipbuilding, manufacture of electrical goods, and of mill machinery. "Great technical skill and a large amount of capital are required for these and private enterprise is not likely to take initiative in such industries" (Minutes of Evidence, Vol. IV, Indian Industrial Commission, 1916-18).

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[1] Letter from Managing Agents, BISCO, dated February 26, 1901, CD—Coal and Iron, February, 1903, B.

[2] Some of the letters and resolutions of the Bengal Chamber of Commerce may be of interest. The reactions of the Bengal Chamber are typical of private enterprise. The Bengal Chamber of Commerce was founded on March 31, 1834, and was to act as "the spearhead of European capital in India" (A. Tripathi, *Trade and Finance in the Bengal Presidency*, 1793-1833, p. 250). In their letter, dated July 15, 1881, the Chamber urged relaxation of the stores purchase rules and recommended that the Government should "procure all supplies upon public tender, published simultaneously in England and India". The Chamber's proposal was not accepted (CD—Accounts and Finance, September, 1881, B). The Chamber could not recommend state enterprise in steel; it held that "the Government should advertise freely that they are prepared to give liberal concessions to parties who might be willing to invest capital in such enterprises", and that the Government should "be prepared to take part of the produce" of the iron and steel works (CD—Coal and Iron, November, 1901, No. 6, B). The Chamber made representation to the Government against the competition of "jail manufactures" with private enterprise; in 1886 it was decided that the consuming departments would take jail articles which were made in Coimbatore, Alipore, Buxar and Bhagalpur jails CI—Industries, May, 1910, File No. 13). The Government, however, ridi-

The weakness of private enterprise (and especially of Indian entrepreneurship) was revealed in the leisurely progress India was making towards industrialisation. Sitanath Ray, Secretary of the Bengal National Chamber of Commerce, wrote in 1905 : "I am most reluctantly obliged to admit that it is this great boon—the boon of Permanent Settlement which makes us lock all our capital on land, ... and prevents us from investing our money in industries". The pressure on land had become alarming. The Famine Commission (1880) and the Dufferin Enquiry (1888) emphasised it and revealed the low level of living of the mass of the peasants. Commercialization of agriculture benefited only a fraction of the rural population—the landlords and rich peasants. The development work of the period had no appreciable impact on the standard of life of the peasants and the artisans. It is not fortuitous that the poverty of the people figured prominently in the graphic pages of Digby and Dutt. But it seems that nineteenth century public-minded men failed to comprehend sufficiently the urgent need of the development of metallurgical industries in which lie the basic interests of the worker and the peasant and the middle class. When they talked of "promotion of indigenous industries", they had generally in mind the cotton textile industry and the cottage industries. The harmonious fabric of old Indian society had suffered a cleavage between town and village; the immemorial manner of life was changing. These social changes seem to have influenced contemporary economic thought.

During the period 1858-1914, the Governors-General had to tackle

culed the contention that the competition of "jail manufactures" was of serious practical importance, and directed Local Governments to "adapt their intramural industries" to the requirements of the departments (CI—Industries, May, 1912, File No. 14). J. Grundy, Inspector of Mines, in his report (dated June 30, 1894) broached the proposal of mining legislation with a view to securing greater safety in the working of mines; Allan Arthur, President of the Chamber, in a speech at the Indian Mining Association gave vent to his anger: "we are prepared to resist with all our strength any blow aimed at the Bengal coal industry" (CD—Coal and Iron, May, 1895, B). When the Government brought a Bill to amend the Indian Companies Act, 1913, in order to regulate and control the managing agency system, the Chamber organised and carried on a pressure campaign against it and the Government obliged them by dropping the "vexed clauses". Mr. Tyson in a centenary survey of the Bengal Chamber tells the story as a whole, but sometimes utters dithyrambic praise for "its integrity, its high purposes" and also for the managing agency system which "is a wholly British device", and "reaches its highest and purest......expression in Calcutta". G. W. Tyson, *The Bengal Chamber of Commerce and Industry*, 1853-1953, pp. 97, 100, 178.

a complex situation. The "Home Manufacturers", European manufacturers in India, the Indian manufacturers were all working at cross purposes. The "Home Manufacturers" opposed fiscal protection, and relaxation of stores rules, especially in relation to iron and steel and engineering goods. European manufacturers in India urged relaxation of the stores rules, but opposed state enterprise and state control. Indian manufacturers were critical of the *laissez-faire* prescription and were almost unanimously in favour of protection, and of relaxation of stores rules, and of pioneer factories. The Indian Industrial Conference (founded in 1905) carried on a sustained movement for relaxation of the stores rules, protection, greater facilities for technical education, for a forward policy on the part of the Government for India's industrialisation. The Indian National Congress (founded in 1885) had been conducting a campaign for India's industrialisation, for removal of the Cotton Excise Act, for "a system of technical education".[1] Industrialisation was being regarded as a test of national progress, particularly during and after the *swadeshi* phase. The Government had to face serious financial difficulties from the very year 1858-59, which grew worse from 1872-73 with the rapid fall of the gold value of the silver. The Home Charges had risen from about £ 6 million in 1856-57 to £ 19.4 million in 1913-14. There was a formidable increase of the sterling debt due to railways. Foreign competition had begun to break down the British monopoly of the Indian market. Sir George Watt referred to this new danger in 1896, and Mahon in 1899. The competition of "cheap continental iron and steel" had begun to grow in the first decade of the twentieth century. Japan had already emerged as an industrial power. Lord Hardinge, in 1915, referred to the danger of India becoming "the dumping ground for the manufactures of foreign nations". This was a new element in the situation, and it was in this background that the Industrial Commission was appointed in 1916.

We may close this discussion with a brief review of the administrative arrangements which were evolving during the period under discussion. There was no special department or agency in India for the purchase of stores in the Indian market. The officers of the various departments, in addition to their administrative or executive duties, had to undertake the purchase of stores in accordance with the stores rules. They had to prepare, submit and print the voluminous indents. They had no adequate knowledge of the sources of supply of local manufactures; the Catalogue of Indian Manufactures, published by the Director-General of Commercial Information, was "admittedly defective". The India Office exercised rigid control over the stores purchase policy. The defect inherent in such a system is obvious, and it was sought to be obviated by the constitution of the Indian Stores Department in 1922, with what result we have not examined. The expenditure on the upkeep of the the Stores Department of the India Office was considerable, and it was maintained even after the constitution of the Indian Stores Department.[1] As early as 1892, Ranade pointed out the importance of constituting "a separate department of commerce and manufacture" which "can alone devote itself to this work without frequent oscillation of purpose".[2] No separate department to deal with industries was created till 1905 when a separate Department for Commerce and Industry was constituted ; it was the job of the Finance and Commerce Department to deal with policy matters in regard to the purchase of stores, financial help to industries and allied matters.[3] A separate Provincial Department of Industries was set up in Madras in 1906; Lord Morley in his despatch, dated July 29, 1910, negatived the establishment of a separate Department of Industries. It seems that the necessity of creating an administrative apparatus in order to study and understand the special problems of existing industries

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[1] M. M. Malaviya's Note, Indian Industrial Commission (1916-18), pp. 308-9. The Congress at its third session (1887) adopted a resolution pleading for the promotion of technical education and the encouragement of indigenous manufactures; this demand was reiterated in the fourth, fifth and sixth sessions.

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[1] Expenditure on the upkeep of the Stores Department:

Year	Amount
1890-91	£ 24,997
1901-02	£ 23,792
1911-12	£ 27,336

The cost of the establishment maintained at the India Office would be much higher if "salaries" are taken into account; "salaries" accounted for £ 27,711 in 1900-01; £ 27,575 in 1902-3 and £ 28,746 in 1904-5; salary of Consulting Engineer was £ 7,671 in 1900-01 and £ 12,427 in 1904-5. See the *Report of the Stores Committee* (1906) p. 37. The Indian Economic Society, Bombay, proposed that the Stores Department should be abolished, and an Indian Stores Department should be constituted at Delhi (Minutes *of Evidence, Vol. IV, Indian Industrial Commission* (1916-18).

[2] M. G. Ranade, *Iron Industry—Pioneer Attempts*, September 8, 1892, CD—Coal and Iron, December, 1892-B.

[3] W. S. Meyer, *Op. Cit.*

(which have been alluded to in the preceding chapters) and to stimulate and accelerate the growth of new industries in a country like India was very imperfectly realised by the ruling class. It is worthy of note that the Government gave much attention to the working of the ordnance factories. An Inspector-General of Factories was in charge of these factories, and highly qualified men (among whom were Mahon and Townsend) were appointed as Superintendents. Mechanics and artisans were brought from England, and the privilege of "making family remittances" was extended to them.[1] There was large expenditure on ordnance stores; the value of ordnance stores represented a major portion of the total value of "Stores for India" between 1901-02 and 1906-07. In fact, defence spending was considerable, and it was not reduced or replaced by other forms of government spending—irrigation works, roads, power-stations, etc. The needs of defence, however, caused the Government to have a direct impact on industrial activity. The Government had become a manufacturer, and an employer of industrial workers. *Laissez-faire* was breaking down under the impact of reality.

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[1] FD from, No. 229, July 5, 1877-B : "No remittance shall exceed one half the salary of the person".

APPENDIX A

RULES FOR THE SUPPLY OF ARTICLES FOR THE PUBLIC SERVICE ISSUED IN 1913

Rule 1 : *Articles manufactured in India from Indian materials.*

All articles which are produced in India in the form of raw material, or are manufactured in India from materials produced in India, should, by preference, be purchased locally, provided that the quality is sufficiently good for the purpose, and the price not unfavourable.

Rule 2 : *Articles manufactured in India from imported materials.*

All articles manufactured in India from imported materials should, by preference, be purchased in India, subject, however, to the following conditions :

(a) That a substantial part of the process of manufacture of the articles purchased has been performed in India.

(b) That the price is as low as that at which articles of similar quality can be obtained through the India Office.

(c) That the materials employed are subjected to such inspection and tests as may be prescribed by the Government of India.

Note : The term "a substantial part of the process of manufacture" in clause (a) means that a substantial part of the preparation of the finished article must be performed in India, whether from raw materials or from component parts obtained in a finished state from other sources.

Rule 3 : *Articles which are not manufactured in India.*

Articles which are not manufactured in India should be obtained by indent upon the Store Department of the India Office, except in the following cases :

(a) When the articles are already in India at the time of order, and their price and quality are not unfavourable as compared with those at which similar articles could be obtained through the India Office, and the cost of the supply does not exceed the limits prescribed at the end of Rule 13.

(b) In the case of important construction works let out on contract, articles not manufactured in India required for the construction of such works may be supplied by the contracting firm, subject to the following conditions :

(i) That the firm is approved by the Government of India and is included in the list of firms so approved—*vide* Schedule B, Appendix 30, P.W.D. Code, Valume III.

(ii) That the materials are subject to the current specifications and tests prescribed by the Government of India.

Note : Articles of clothing and equipment of European manufacture required for the Burma Police Department may be procured for the present without the intervention of the India Office.

Rule 4: *Articles which should be purchased in India.*

The following articles, whether manufactured or produced in India or not, should be purchased in India, provided that they comply with the current specifications, are of the requisite quality, and can be obtained at a not unfavourable price.

(a) Those of a perishable nature.

(b) Explosives.

(c) Block tin.

(d) Wines and spirits and English bottled beer for the use of Government hospitals in India.

(e) Kerosene oil.

(f) Plant and materials for electric installations, intended to take current from existing centres ; and small electrical power and lighting plants of not more than 25 kilowatt capacity, which involve the provision of generators and cables for distribution, provided they comply with the current specifications and tests prescribed by the Store Department of the India Office.

(g) Australian timber.

(h) Australian copper.

(i) Italian marble.

(j) British Columbian timber.

(k) Plant and materials for small gas installations the cost of which does not exceed Rs. 15,000.

(l) Such other classes of articles as may from time to time be prescribed by the Government of India. All such cases should be reported to the Secretary of State for his information.

Rule 5 : *Special purchases in India.*

When serious inconvenience to the public service would be caused by waiting to obtain an article from England through the Director-General of Stores, or when, owing to the greater promptitude of supply, an economy can be effected by purchasing in India articles which, under the foregoing rules, should be obtained through the Store Department, the purchase may be made in India, subject to Rule 13, provided that the articles are already in India at the time of order; but in such cases, if the value of the articles exceeds Rs. 750/-, the sanctioning officer should place on record the reasons which make the local purchase desirable. This record shall be available for the inspection of the Examiner of Accounts or the Supervising Officer when required.

Rule 6 : *Inter-departmental purchases.*

Nothing in the rules is to be deemed to prohibit the purchase of stores of European manufacture by one Department or Railway from another.

Rule 7: *Method of obtaining stores not purchased in India.*

All articles which under the foregoing rules are not to be bought in India should be obtained by indent on the Store Department of the India Office, except any which the Secretary of State may have specially authorised the Government of India or its officers to purchase direct outside India. Such purchase is at present permissible in the case of the following articles:

(i) Seeds.
(ii) Cinchona bark.
(iii) Articles for experimental or research purposes required by officers approved by the Government of India from time to time. A list of the officers thus approved is given in Appendix A.
(iv) Excise instruments and apparatus required by provincial Excise Departments for experimental or research purposes.
(v) China glass, cutlery, plate, crockery and perishable fabrics, including linen, for residences which are furnished by Government.
(vi) Australian timber.

(vii) Australian lead.

(viii) Such articles as Superintendents of Vaccine Depots may require for the preparation of vaccine lymph (e.g., lanoline and glycerine).

(ix) Chemicals and scientific apparatus of small value required by Government schools and colleges, which do not require careful inspection and testing.

(x) Articles required for Viceregal residences in special and urgent cases.

Note : Payments for stores purchased under this rule should be made direct to the suppliers by the purchasing officers.

GENERAL RULES

Rule 8: *Forecast of requirements which should under the rules be complied with by indent on the India Office.*

All requirements should be fulfilled locally in accordance with the provisions of the Resolution No. 4941-4988-102, dated the 14th July, 1909, provided that quality and price are not unfavourable and provided that such purchase does not violate any of the instructions contained in these rules. In cases, however, in which stores have to be obtained through the India Office, every effort should be made to foresee requirements so that the indents may be despatched in ample time. Persistent failure of any officer to make such efforts should be brought to notice by the Local Government or other authority, which may, at its discretion, cancel or reduce the powers of sanction entrusted to the officer at fault.

Rule 9: *Time required to obtain Stores from England.*

It may be assumed that the time required from the transmission of an indent upon the Secretary of State to the receipt of the stores is:

Urgent telegraphic indents, not less than three months.

Ordinary indents, six to ten months, according to the article demanded.

For special stores, e.g., large girders, rolling stock, &c., up to one year in ordinary times.

Note : When ordinary stock articles conforming to well-recognised standards are required within a shorter period than three months, and the purchase has, under the rules, to be made through the India Office, the indenting officer shall, if he desires that the procedure indicated in the Resolution in the Department of Commerce and Industry No. 6822-6869-37, dated the 13th September, 1911, be adopted, state the fact clearly in his telegraphic indent.

Rule 10: *Method of comparing prices.*

In all cases in which the selection of sources of supply depends upon comparison of prices, the procedure to be adopted for such a comparison is as follows:

(i) A reference should be made to Home prices as shown in the Rate Lists, and freight should be added at the lowest rates paid by the India Office, together with 13*s.* 4*d.* per 100 for interest, 2*s.* 2*d.* per 100 for insurance, and 3*d.* per ton freight brokerage.

(ii) In cases of important contracts, the prices ruling in the English market should be ascertained by telegraphic reference to the Director-General of Stores.

(iii) In cases where the necessary information as to Home prices is not available from the Rate Lists, the purchase in India shall be subject to the condition that the price is not unfavourable.

(iv) In order to arrive at the market value at an Indian port of the article imported from England the following charges shall be included:—

(a) Landing, wharfage, and port charges as shown in the Rate Lists.

(b) Customs duty, as shown in the Tariff to be applicable to the article in question, to be calculated on its cost *plus* the additional charges mentioned in the earlier part of this rule.

(v) The cost of carriage to site from port or place of manufacture, as the case may be, shall be taken into account.

Rule 11: *Tests.*

Any articles purchased in India which should be tested are liable to the specifications laid down from time to time by competent authority, with the approval of the Secretary of State in Council, and should be required to pass the tests prescribed for such articles.

Rule 12: *Firms from which iron and steel may be bought in India.*

Important iron and steel work, if purchased in India, should only be obtained from firms approved by the Local Government or Administration and entered in a Schedule as corrected from time to time by the Government of India. A list of approved firms is given in Appendix B.

Note : By "important iron and steel work" are meant articles of iron or steel, which form important components of the project in hand; e.g., bridge girders, and roof trusses, built up in the firm's workshops and supplied, ready for erection, in such sections as may be convenient, and rolled steel beams, rails or other sections cut to length or otherwise prepared at the firm's workshops to suit the indenting officer's requirements. The intention of the rules is to ensure that parts, the accurate preparation of which is essential to the security of a project, shall be obtained only from firms which possess workshops and appliances capable of turning out work of the desired standard. The raw materials used may be either imported or of Indian manufacture, subject to the usual specifications. (CD—Stores, October, 1913).

APPENDIX B

LIST OF ENGINEERING FIRMS APPROVED BY THE GOVERNMENT

In 1913

In Bengal

The Bengal Iron and Steel Company, Ltd., Barakar.
The Vulcan Iron Works, Ltd., of Calcutta.
Messrs. Burn & Co., of Calcutta.
Messrs. Jessop & Co., of Calcutta.
Messrs. John King & Co., of Calcutta.
Messrs. Ahmuty & Co., of Calcutta.
Messrs. Martin & Co., of Calcutta.
Messrs. Kessory Lall Mukerjee & Co., of Calcutta.
Messrs. Heatley and Gresham, Ltd., of Calcutta.
Messrs. A. and J. Main & Co., of Calcutta.
The Shalimar Works, Ltd., of Calcutta and Chittagong.
Messrs. T. E. Thomson & Co., Ltd., of Calcuttat.
Messrs. W. Leslie & Co., of Calcutta.
Messrs. Balmer Lawrie & Co., of Calcutta.

In the Bombay Presidency

Messrs. G. Gahagan & Co., of Bombay.
Messrs. Richardson and Cruddas of Bombay.
Messrs. Alcock, Ashdown & Co., of Bombay.
Messrs. Garlick & Co., of Bombay.
Messrs. Marsland Price & Co., of Bombay.
Messrs. Sorabji Shapurji & Co., of Bombay.
Messrs. H. I. Dixon & Co., of Bombay.
Messrs. Cosser & Co., of Karachi.
Messrs. McKenzie & Co., of Karachi.
Messrs. R. R. Herman & Co., of Karachi.
Messrs. B. R. Herman & Co., of Karachi.
The Engineering Co., of Karachi.

In the Madras Presidency

Messrs. Massey & Co., of Madras.
Messrs. Oakes & Co., of Madras.
Arbuthnot's Industrials, Ltd., Reliance Foundry, of Madras.
Messrs. Mansfield and Sons, of Madras.

In Burma

The Irrawarddy Flotilla Co., Ltd.
Messrs. Bullock Brothers & Co., Ltd., Rangoon.
The Dunnedaw Engineering Works, Rangoon.
Messrs. Howarth, Erskine, Ltd., Singapore.
The Burma Engineering and Trade Co., Ltd., Rangoon.

In the United Provinces

Messrs. T. Crowley & Co., Allahabad.
The Empire Engineering Co., Ltd., Cawnpore.
Lucknow Iron Works.

In the Punjab

Messrs. N. D. Hari Ram and Brothers, Rawalpindi.

In Bihar and Orissa

Messrs. Arthur Butler & Co., of Mozaffarpur.
The Tata Iron and Steel Co., Ltd., Sakchi.

(*CD—Stores, October, 1913*)

APPENDIX C

LIST OF COMPANIES WITH STERLING CAPITAL

Sl. No.	Name	Year of Registration	Nominal Capital £	Situation of Office
1	2	3	4	5
1	Borelli Tea Co.	1874	120,000	Calcutta
2	Bally Paper Mills	do	80,000	do
3	Anglo-Indian Spinning & Manufacturing Co.	do	300,000	Bombay
4	Doom Dooma Tea Co.	1877	150,000	Calcutta
5	Mirzapur Tea Co.	1877	5,000	do
6	Dejoo Tea Co.	1878	35,000	do
7	Scottpore Tea Co.	1878	100,000	do
8	Cherra Tea Co.	1880	120,000	do
9	Mysore Gold Mining Co.	do	135,000	Madras
10	Ooregum Gold Mining Co.	do	125,000	do
11	Nundydroog Gold Mining Co.	do	100,000	do
12	Mysore Reefs Gold Mining Co.	do	120,000	do
13	Endogram Tea Co.	do	40,000	Calcutta
14	Calcutta Tramways Co.	do	350,000	do
15	West of India Portuguese Guaranteed Railway Co.	1881	800,000	Marmagoa
16	Assam Railways and Trading Co.	do	393,750	Assam
17	Chubwa Tea Co.	do	50,000	Calcutta
18	Southern Maratha Railway Co.	1882	3,000,000	Bombay
19	Jakai Tea Co.	do	30,000	Calcutta

(Contd.)

Sl. No.	Name	Year of Registration	Nominal Capital £	Situation of Office
1	2	3	4	5
20	Bengal and North Western Railway Co.	do	2,200,000	Gorakhpur
21	Nizam's Guaranteed State Railways Co.	1883	2,000,000	Hyderabad
22	Arakan Co.	1885	75,000	Rangoon
23	Salonah Tea Co.	do	100,000	Calcutta
24	Indian Midland Railway Co.	do	3,000,000	Bombay
25	Dooars Tea Co.	do	150,000	Calcutta
26	Gokak Water-power Manufacturing Co.	do	100,000	Bombay
27	Lukwah Tea Co.	do	30,000	Calcutta
28	Gold-fields of Mysore	1886	220,000	Mysore
29	Coromandel Gold Co.	do	80,000	do
30	Lungla Tea Co.	do	40,000	Calcutta
31	Burma Oil Co.	1886	120,000	Rangoon
32	Delhi-Umballa-Kalka Railway Co.	1889	800,000	Calcutta
33	Champion Reef Gold Mining Co.	do	200,000	Madras
34	Nine Reefs	do	160,000	do
35	Majuli Tea Co.	do	45,000	Calcutta
36	Rajmai Tea Co.	1890	160,000	do
37	Chandpore Tea Co.	do	32,000	do
38	Sun Life Assurance Co. of India	1891	150,000	do
39	Chargola Tea Association	do	250,000	do
40	Bengal Dooars Railway Co.	do	150,000	do
41	Doodputlee Tea Co.	do	40,000	do
42	Assam Bengal Railway Co.	1892	1,500,000	Chittagong
43	Makum (Assam) Tea Co.	1892	100,000	Calcutta

(Contd.)

Sl. No.	Name	Year of Registration	Nominal Capital £	Situation of Office
1	2	3	4	5
44	East India Coal Co.	1893	100,000	Calcutta
45	Longai Valley Tea Co.	1893	75,000	do
46	Sylhet Tea Co.	1894	12,000	do
47	Meenglas Tea Co.	1894	45,000	do
48	Borjan Tea Co.	1895	30,000	do
49	Singlo Tea Co.	do	300,000	do
50	South Bihar Light Railway Co.	do	350,000	do
51	East India and Ceylon Tea Co.	do	200,000	do
52	Calcutta Electric Supply Corporation	1897	100,000	do
53	Baraqora (Sylhet) Tea Co.	do	200,000	do
54	Nedeem Tea Co.	do	450,000	do
55	Jetinga Valley Tea Co.	do	150,000	do
56	Bengal United Tea Co.	do	300,000	do
57	East Indian Distilleries and Sugar Factories	do	250,000	Madras
58	North Cachar Tea Co.	1899	30,000	Calcutta
59	Bengal Iron and Steel Co.	do	350,000	do
60	Hutti (Nizam's) Gold Mines	1901	50,000	Hyderabad
61	Noakhali Railway Co.	do	130,000	Chittagong
62	India Development	do	500,000	Mozufferpore
63	Oriental Gold Mining Co.	do	...	Mysore

(*Statistics and Commerce, June, 1904, No. 282-293*).

APPENDIX D

LIST OF JOINT STOCK COAL COMPANIES AT WORK IN INDIA

on 31st March, 1910

Sl. No.	Name of Company	When registered	Nominal capital Rs.	Paid-up capital Rs.
	BENGAL			
1.	Adjai Coal Co.	14th Aug. 1893	3,50,500	3,50,000
2.	Aldih Coal Co.	24th Sept. 1901	8,00,000	8,00,000
3.	Angarpathra Coal Co.	30th Jan. 1908	3,00,000	1,98,800
4.	Auckland Coal Co.	14th Jan. 1908	4,00,000	4,00,000
5.	Badjua Coal Co.	16th April 1908	4,00,000	3,33,000
6.	Bamanband Coal Co.	10th Nov. 1908	1,85,000	...
7.	Bamangarah Coal Co.	19th Nov. 1908	5,00,000	2,89,500
8.	Bansjorah Coal Co.	12th April 1907	6,00,000	6,00,000
9.	Basra Coal Co.	15th Feb. 1908	3,00,000	2,09,425
10.	Barabani Coal Concern	13th June 1905	10,00,000	9,96,830
11.	Barakar Coal Co.	19th April 1901	30,00,000	26,25,000
12.	Basanti Oakdense Coal Co.	12th Feb. 1907	5,00,000	5,00,000
13.	Bengal Bhatdee Coal Co.	27th Nov. 1906	4,50,000	4,49,350
14.	Bengal Coal Co.	24th July 1858	30,00,000	30,00,000
15.	Bengal Giridhi Coal Co.	10th Jan. 1908	4,50,000	4,50,000
16.	Bengal Nagpur Coal Co.	18th Dec. 1890	3,37,500	3,37,500
17.	Bhalgora Coal Co.	28th April 1904	8,00,000	8,00,000

Sl. No.	Name of Company	When registered	Nominal capital Rs.	Paid-up capital Rs.
	BENGAL (*Contd.*)			
18.	Bhulanbararee Coal Co.	9th Aug. 1906	5,50,000	5,50,000
19.	Bhuskajuri Coal Co.	31st May 1901	7,50,000	5,03,070
20.	Bilbera Coal Co.	22nd Jan. 1903	7,00,000	4,00,000
21.	Bokaro Jherriah Coalfields	1st April 1908	8,00,000	4,25,000
22.	Bokaro and Ramgur Collieries	21st Dec. 1907	16,00,000	16,00,000
23.	Borrea Coal Co.	10th Feb. 1891	9,00,000	9,00,000
24.	British India Coal Co.	1st Sept. 1906	2,00,000	2,00,000
25.	Budrachuck Coal Mining Co.	12th Dec. 1907	5,00,000	5,00,000
26.	Bugdigi Kujama Collieries	19th July 1907	2,50,000	2,50,000
27.	Burra Dhemo Coal Co.	14th Feb. 1908	6,50,000	4,61,250
28.	Burragarh Coal Co.	17th Oct. 1907	5,00,000	5,00,000
29.	Busserya Coal Co.	1st June 1904	1,00,000	36,070
30.	Central Coal Co.	7th Jan. 1908	2,00,000	1,045
31.	Central Jherriah Coal Co.	17th Jan. 1900	6,32,000	1,28,000
32.	Central Kurkend Coal Co.	7th May 1901	1,50,000	1,50,000
33.	Cenral Pench Coal Co.	5th Feb. 1908	5,00,000	4,09,412
34.	Charnock Collieries	23rd Aug. 1907	3,00,000	2,64,125
35.	Damuda Coal Co.	8th Feb. 1890	6,00,000	3,97,000
36.	Damra Coal Co.	23rd Jan. 1907	4,00,000	3,44,240
37.	Domestic Coal Co.	8th June 1909	1,00,000	...
38.	Dumeriadih Coal Co.	30th April 1908	1,00,000	...

Sl. No.	Name of Company	When registered	Nominal capital Rs.	Paid-up capital Rs.
	BENGAL (*Contd.*)			
39.	East Bengal Coal Co.	17th Mar. 1909	3,00,000	1,105
40.	East India Coal Co. (a)	20th April 1893	£120,000 =18,00,000	£119,995 =17,99,925
41.	Eastern Boraee Coal Association	21st Feb. 1908	3,00,000	...
42.	Eastern Coal Co. (a)		£50,000 =7,50,000	£30,000 =4,50,000
43.	East Jherria Coal Co.	11th Jan. 1907	3,00,000	3,00,000
44.	Empire Coal Co.	3rd March 1905	2,00,000	1,78,500
45.	Equitable Coal Co.	12th Mar. 1895	24,00,000	20,00,000
46.	Ghusik and Muslia Collieries	2nd May 1907	14,00,000	13,00,000
47.	Gopalichak Coal Co.	21st Aug. 1901	9,50,000	9,50,000
48.	Govindpore Coal Co.	4th Oct. 1907	2,00,000	2,00,000
49.	Huntodih Coal Co.	9th Nov. 1906	3,00,000	3,00,000
50.	Hurriladih Coal Co.	19th July 1901	8,00,000	8,00,000
51.	Imperial Coal Co.	13th Sept. 1907	4,50,000	3,00,000
52.	Industry Coal Co.	21st Oct. 1908	2,50,000	2,49,945
	(a) The Company was registered in England.			
53.	Indian Coal and Mineral Syndicate (a)		£5,000 =75,000	
54.	Indian Collieries Syndicate (a)	22nd April 1902	£100,000 =15,00,000	£90,000 =13,50,000
55.	Jamgram Coal Co.	29th July 1901	7,50,000	5,00,700
56.	Jherriah Colliery Co.	5th July 1895	3,00,000	3,00,000
57.	Jinagarah Coal Co.	20th Feb. 1908	5,50,000	3,21,225

Sl. No.	Name of Company	When registered	Nominal capital Rs.	Paid-up capital Rs.
	BENGAL (*Contd.*)			
58.	Jumoni Coal Co.	31st May 1901	14,00,000	10,03,070
59.	Juggadi Coal Co.	11th Feb. 1908	4,00,000	...
60.	Katras Jherriah Coal Co.	4th Aug. 1893	5,00,000	5,00,000
61.	Kessurgurh Coal Co.	27th Sept. 1907	6,00,000	6,00,000
62.	Khas Jherriah Colliery Co.	20th April 1905	1,25,000	1,00,000
63.	Koolustore Coal Co.	22nd Jan. 1908	7,00,000	5,00,000
64.	Kosoonda and Nyadee Collieries	23rd Dec. 1902	7,00,000	7,00,000
65.	Kuardi Coal Co.	1st Nov. 1906	5,50,120	3,00,000
66.	Lakshmigang Coal Co.	1st July 1908	5,00,000	3,30,550
67.	Lakurka Coal Co.	23rd Jan. 1907	4,50,000	4,50,000
68.	Lutchipur Coal Co.	1st Nov. 1898	6,12,000	2,52,400
69.	Marine Coal Co.	18th May 1901	2,50,000	2,50,000
70.	Matigara Coal Co.	14th Feb. 1908	8,00,000	8,00,000
71.	Minto Coal Co.	7th Aug. 1907	3,00,000	2,97,970
72.	Moheshpur Coal Co.	11th Feb. 1908	7,00,000	5,62,000
73.	Mundalpoor Coal Co.	25th May, 1907	11,70,000	7,70,000
74.	Mucheridih Coal Co.	20th June, 1907	4,00,000	4,00,000
75.	National Coal Co.	20th Feb. 1908	6,00,000	2,60,620
76.	New Birbhum Coal Co.	6th May, 1873	7,20,000	7,20,000
77.	New Kendah Coal Co.	3rd Oct. 1907	3,00,000	2,84,600
78.	New Kusunda Coal Co.	14th Oct. 1908	1,50,000	1,04,000
79.	New Manbhum Coal Co.	18th June, 1896	3,00,000	2,72,030

Sl. No.	Name of Company	When registered	Nominal capital Rs.	Paid-up capital Rs.
	BENGAL (*Contd.*)			
80.	New Tetturya Coal Co.	31st Jan. 1907	5,50,000	5,50,000
81.	Nodiha Coal Co.	22nd May, 1907	8,00,000	6,00,000
82.	North West Coal Co.	6th June, 1906	3,25,000	2,72,500
83.	Nowaghur Coal Co.	1st Nov. 1898	6,12,000	2,52,400
84.	North Damuda Coal Co.	1st April, 1908	5,00,000	5,00,000
85.	Ondal Coal Co.	19th Feb. 1897	6,50,000	4,50,000
86.	Oriental Coal Co.	11th Dec. 1907	5,50,000	5,50,000
87.	Parasea Collieries	29th Jan. 1908	8,00,000	7,97,000
88.	Pench River Coal Co.	5th Feb. 1908	5,00,000	3,42,500
89.	Pench Consolidated Coal Co.	5th Feb. 1908	5,00,000	3,50,000
90.	Pench Valley Coal Co.	31st Aug. 1905	12,00,000	3,50,000
91.	Phoenix Coal Co.	12th June, 1907	3,00,000	3,00,000
92.	Phularitand Coal Co.	15th Jan. 1907	7,00,000	6,98,000
93.	Pundakanali Coal Co.	11th Nov. 1907	5,00,000	2,35,045
94.	Raniganj Coal Association	8th April, 1873	9,00,000	9,00,000
95.	Reliance Coal Co.	12th Aug. 1896	6,00,000	6,00,000
96.	Royal Coal Co.	5th March, 1908	14,00,000	3,83,600
97.	Royalty Coal Syndicate	7th June, 1898	1,40,000	1,40,000
98.	Saltore Coal Co.	19th Mar. 1907	15,00,000	13,75,125
99.	Satpukuria and Asansol Collieries	16th Nov. 1907	8,00,000	8,00,000
100.	Seebpore Coal Co.	26th June, 1900	4,00,000	2,80,480
101.	Sejooah Coal Co.	14th April, 1902	5,00,000	5,00,000
102.	Sendra Coal Co.	16th Dec. 1907	8,00,000	8,00,000
103.	Shampore Coal Co.	26th Fe. 1896	3,00,000	3,00,000

Sl. No.	Name of Company	When registered	Nominal capital Rs.	Paid-up capital Rs.
	BENGAL (*Contd.*)			
104.	Shergarh Coal Co.	7th April 1909	5,00,000	...
105.	Singarani Coal Synd.	29th Jan. 1895	5,50,000	5,50,000
106.	Sindihi Coal Co.	18th Mar. 1907	4,50,000	4,00,810
107.	Sitarampore Coal Co.	23rd May, 1896	3,75,000	3,75,000
108.	Sodeeh Coal Co.	25th Oct. 1906	4,50,000	4,50,000
109.	South Govindpore Colliery	26th Nov. 1907	7,50,000	7,50,000
110.	Sudamdih Coal Co.	23rd Mar. 1907	9,00,000	8,69,160
111.	Standard Coal Co.	7th Dec. 1900	8,00,000	8,00,000
112.	Sudreadih Coal Co.	25th Jan. 1907	3,50,000	3,50,000
113.	Sunga Mahal Collieries	17th Dec. 1907	4,50,000	3,20,937
114.	Sutikdih Coal Co.	3rd Feb. 1908	7,00,000	6,00,000
115.	Tetulmuri Collieries	15th Feb. 1908	11,00,000	9,00,000
116.	Thandabari Coal Synd.	17th Jan. 1908	90,000	90,000
117.	Union Coal Co.	3rd Jan. 1908	3,50,000	3,50,000
118.	Upper Pench Coal Synd.	5th Feb. 1908	6,00,000	4,00,000
119.	West Tetturiya Collieries.	4th April, 1908	3,00,000	3,00,000
		Total:	7,41,98,620	6,09,50,114
	PUNJAB			
120.	Northern India Coal Co.	9th Dec. 1909	10,00,000	...
121.	Punjab and Bengal Coal Co.	30th Nov. 1908	10,00,000	1,93,368
		Total:	20,00,000	1,93,368

Sl. No.	Name of Company	When registered	Nominal capital Rs.	Paid-up capital Rs.
	BOMBAY			
122.	Chindwara Coal Synd.	26th June, 1909	75,000	56,000
123.	Hengir Rampur Coal Co.	21st Aug. 1909	10,00,000	8,08,800
124.	West Navagarh Coal Co.	28th Aug. 1907	3,00,000	2,03,240
		Total:	13,75,000	10,68,040
	MADRAS			
125.	Indian Mineral Exploration Co.	21st Mar. 1907	6,00,000	5,00,000
126.	Southern India Coal Mining Synd.	3rd Feb. 1906	2,25,000	2,09,650
		Total:	8,25,000	7,09,650
	BALUCHISTAN			
127.	Baluchistan Coal Co.	19th Oct. 1909	2,50,000	1,11,670
	NIZAM'S TERRITORY			
128.	Hyderabad (Deccan) Co. (a) (b)		£ 672,000 = Rs. 1,0,80,000	672,000 = Rs. 1,00,80,000
	Total Coal Com.		8,87,28,620	7,31,12,842

(a) The Company was registered in England.

(b) The Company is also engaged in gold, diamond, etc., mining operations.

(CI—Industries, Dec. 1910, File No. 34).

APPENDIX E

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